

A revision of the African huntsman spider genus *Palystes* L. Koch, 1875 (Araneae: Heteropodidae)¹

by

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ABSTRACT

Palystes L. Koch, 1875, type genus of Palystinae (Heteropodidae), is revised and a cladogram proposed for the 15 species recognised, including 6 new species. A key to the species is provided. *Palystes* occurs in eastern and southern Africa. Patterns of biogeography and relationships in a redefined Palystinae, compared with sequences of hypothesised vicariance events during the evolution of the African landscape, suggest a southern African, minimum late Miocene-Pliocene origin for the genus. Three species groups, defined by markings and forms of male and female genitalia, are recognised: *castaneus* group (western Cape Province of South Africa – 3 species), *lunatus* group (eastern and interior western Cape Province of South Africa, Lesotho and Transkei – 6 species); *superciliosus* group (eastern and southern Africa – 6 species). Seventeen nominal species previously attributed to *Palystes*, including 11 from the Indo-Australasian region, are transferred to other genera, including a new genus, *Parapalystes*, which is also described. These genera are discussed; annotated lists are provided for the African genera and for a resurrected Oceanian genus, *Gnathopalystes* Rainbow, 1899. Definitions of the family Heteropodidae and three subfamilies (Palystinae, Heteropodinae and Staianinae) affected by the revision, are reviewed.

New genus: *Parapalystes* (type species: *Parapalystes euphorbiae* sp. n. from the north-western Cape, South Africa).

Resurrected genus: *Gnathopalystes* Rainbow, 1899 (type species: *Gnathopalystes ferox* Rainbow, 1899, from Santa Cruz, Oceania), previously synonymised under *Palystes*.

Valid, named *Palystes* species: *P. castaneus* (Latreille, 1819); *P. superciliosus* L. Koch, 1875; *P. hoehneli* Simon, 1890; *P. lunatus* Pocock, 1896; *P. johnstoni* Pocock, 1896; *P. ellioti* Pocock, 1896; *P. perornatus* Pocock, 1900; *P. leppanae* Pocock, 1902; *P. crawshayi* Pocock, 1902.

New species: *Palystes stilleri*, *P. martinfilmeri*, *P. karooensis*, *P. stuarti*, *P. ansiedippenaarae*, *P. leroyorum* and *Parapalystes euphorbiae*, all from South Africa.

New synonyms: *Palystes chaperi* Simon, 1880 = *P. castaneus* (Latreille, 1819); *P. natalius* (Karsch, 1878), *P. spenceri* Pocock, 1896, *P. modificus* Strand, 1906, and *P. superciliosus* var. *fasciiventris* Strand, 1907 = *P. superciliosus* L. Koch, 1875; *P. kibonotensis* Lessert, 1921, and *P. bornemisizai* Caporiacco, 1947 = *P. hoehneli* Simon, 1897; *P. amanicus* Strand, 1907 and *P. affinis* Lessert, 1921 = *P. ellioti* Pocock, 1896; *Palystes incanus* Thorell, 1890 = *Gnathopalystes kochi* (Simon, 1880).

New combinations: *Palystes speciosus* Pocock, 1898, *P. dasyrinus* Hogg, 1914 and *P. ledleyi* Hogg, 1922, transferred to *Heteropoda* Latreille, 1804; *Palystes pilipodus* Strand, 1913, transferred to *Anchonastus* Simon, 1898; *Palystes scutatus* Pocock, 1902, transferred to *Panaretella* Lawrence, 1937; *Palystes ignicomus* L. Koch, 1875, *P. crucifer* Simon, 1880, *P. kochi* Simon, 1880, *P. rutilans* Simon, 1899, *P. nigriventer* Kulczynski, 1910 and *P. nigrocornutus* Merian, 1911, transferred to *Gnathopalystes* Rainbow, 1899; *Palystes cultrifer* Pocock, 1900, *P. lycosinus* Pocock, 1900, *P. whiteae* Pocock, 1902, and *Remmus megacephalus* (C. Koch, 1845), transferred to *Parapalystes* gen. n.

Neotype designations: The holotype of *Thomisus castaneus* Latreille, 1819, is designated the neotype for *Palystes frenatus* L. Koch, 1875, making them objective synonyms; an adult female from the type locality (Maseru, Lesotho) is designated as neotype for *Palystes crawshayi* Pocock, 1902.

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Lectotype designations: *Palystes superciliosus* L. Koch, 1875; *P. cultrifer* Pocock, 1900; *P. lycosinus* Pocock, 1900; *P. ellioti* Pocock, 1896; *P. johnstoni* Pocock, 1896; *P. rutilans* Simon, 1899, *P. perornatus* Pocock, 1900; *P. kibonotensis* Lessert, 1921; *Gnathopalystes ferox* Rainbow, 1899.

Species *incertae sedis*: *Palystes pinnotherus* (Walckenaer, 1837); *P. fornasinii* (Pavesi, 1881); *P. flavidus* Simon, 1897; *P. reticulatus* Rainbow, 1899; *P. spiralis* Strand, 1907 and *P. convexus* Strand, 1907.

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INTRODUCTION

This is a contribution to the revision of the heteropodid subfamily Palystinae. It concentrates on the taxonomic revision, cladistics, biogeography and natural history of the largest genus, its type genus *Palystes* L. Koch, 1875, a group of large, robust spiders (Fig. 1), previously with some 38 attributed African and Indo-Australasian species. It also includes discussions on the three subfamilies affected by this revision: Palystinae, Heteropodinae and Staianinae. Annotated species lists for all genera affected by new combinations (with the exception of the very large genus *Heteropoda* Latreille, 1804) are also provided. In addition to the types of *Palystes* species examined during this study, a wide range of other African and Indo-Australasian specimens, including types of other genera, were studied to determine generic limits and affinities. Notes on this material are included in the relevant sections.



Fig. 1. *Palystes castaneus* (Latreille, 1819), female (Photograph by D. R. D'Ewes).

In this study *Palystes* is redefined to include only those species apparently forming a monophyletic group with the type species, *Palystes castaneus* (Latreille, 1819). The generic name has been retained for only 9 of the previously described species, all from Africa, while a further 6 new species from South Africa are added. Twelve of these species are endemic to southern Africa south of the Limpopo River. The remaining three are distributed north of the Limpopo, through eastern Africa into Rwanda and Uganda. The majority of these species are restricted to relatively small areas. It is probable that further species await description from the Cape interior, the relatively poorly collected regions north of the Zambezi River, and the disjunct montane forests in eastern and central Africa.

Despite the size of the family (more than 700 described species in 82 genera), and

the prevalence of its members among the large spider fauna of most tropical and subtropical regions, heteropodids are still relatively poorly known. Most genera and species were described in the last century and there is considerable confusion in the literature over the identity of many of the older genera, including *Olios* Walckenaer, 1837, and *Sparassus* Walckenaer, 1805 (also known as *Eusparassus* Simon). Even the correct name of the family has still to be determined; it is presently known under three names: Sparassidae Bertkau, 1872, Heteropodidae Thorell, 1873 and Eusparassidae Järvi, 1912. The oldest name, Sparassidae, was once the most commonly used name, but is based on an unrecognisable type genus, *Sparassus* Walckenaer, 1805. This unsatisfactory situation was reviewed by Platnick and Levi (1973), who recommended that until the identity of *Sparassus* had been established, the next oldest, available name, Heteropodidae, should be used instead.

Revisory work on the Heteropodidae is long overdue, as little has been done subsequent to the publications of Simon (1897–1903), Hogg (1903), and Järvi (1912, 1914). Latterly, however, Australasian heteropodids have been studied by Hirst (1989a 1989b 1990 1991a 1991b), who has revised and described Deleninae and added a new genus, *Keilira*, to the Heteropodinae, and Todd-Davies (1994), who has revised the *Heteropoda* species of Australia and added a new genus, *Yinthe*. The present revision clarifies the position of the Palystinae and extends the Australian initiative.

Whether the heteropodids form a monophyletic group has still to be settled. Lehtinen (1967), in his notes on the evolution of araneomorphs, tentatively linked the Clubionidae with the heteropodids in a superfamily Sparassoidea, but suggested that they might belong in the Amaurobioidea. Lehtinen (*pers. comm.*) doubts that members of the European genus *Micrommata* Latreille belong in the same family as the large tropical genera allied to *Heteropoda* Latreille. He suggests that closer relatives of *Micrommata* may be found among the philodromids and clubionids. He also questions whether many of the species ascribed to *Olios*, the largest heteropodid genus, have been correctly assigned. About half of the heteropodid species described have been placed in *Olios*.

A widely used synapomorphy for the family is possession of a dorsal trilobate membrane at the metatarsal-tarsal joint, which extends tarsal movement. A further synapomorphy has been suggested by Homann (1971) who maintains that the nature of the pigmentation and a split rhabdome in the secondary eyes of heteropodids are unique to the family. He describes different structures for the clubionids and philodromids. This has still to be tested for all genera presently included in the Heteropodidae.

In addition to the two synapomorphies mentioned, heteropodids are presently recognised as entelegyne araneomorph hunting spiders with laterigrade leg arrangement, sharing the following combination of morphological characters: no colulus or its homologue; a well-developed scopular brush of modified setae ventrally on the metatarsus and tarsus of all legs; two pectinate tarsal claws subtended by a dense tarsal claw scopula; cheliceral fang furrow with well-developed retro- and anterolateral rows of teeth, the retromargin with two or more teeth; a notched trochanter; and eight eyes in two straight, or nearly straight, rows of four, anteriorly across the caput.

MATERIALS AND METHODS

Specimens were studied and drawn with the aid of a Wild M5A stereo microscope equipped with a drawing tube. Selected specimens were also examined with a JEOL T-200 scanning electron microscope. Descriptions and measurements (in millimetres) and ratios given are those of type specimens, unless otherwise stated. Illustrations (unless otherwise indicated) are of the holotype and a paratype of the opposite sex. References in the text to 'the Code' are to the *International Code of Zoological Nomenclature* (1985).

Synonymy lists for each species include all specific names and generic combinations, as well as any other pertinent nomenclatural changes, errors or comments. Additional citations from the literature contained in Roewer (1954), Bonnet (1958) and Brignoli (1983) are not repeated.

Species descriptions/redescriptions are arranged alphabetically within each of the three species groups in the following order: group-name species, other existing species, new species. Under material examined, data entry for a specimen or series of specimens from a particular locality ends with the depository's acronym (and sometimes accession number) in parenthesis, and a semicolon. If entries are separated by a comma, this means that the localities are usually suburbs of a city (followed by a colon) or some other form of subordinate category.

Cladograms were derived using Hennig86 version 1.5 (© James S. Farris 1988).

Genital morphology:

The terminology used here for the male palpal organ (Fig. 9) largely follows that of Lamoral (1973) for *Palystes castaneus*, but differs in several respects. Differences are: 1). the use of the term 'palpal organ' for the genitalic organ on the tarsus of the adult male pedipalp instead of 'tarsal organ' (a term reserved for the small, apparently chemo-sensory, organs described by Blumenthal (1935) and found on all tarsi of both sexes of most, if not all, spiders). 2) the use of the term 'conductor' for the membrane arising from the tegular bulb (Fig. 9b, co) and which opposes the embolus, instead of the term 'median apophysis'. 3). the use of the phrases 'tegular flange' or 'lateral sclerite' for the flared tegular ridge (Fig. 9a, ls) flanking the embolus, instead of 'conductor'. This is in keeping with presently accepted terminology (e.g. Foelix 1982, Todd-Davies 1994 & *pers. comm.*). Terminology used for the epigynum (Figs 8a, 8b) follows Foelix (1982) and the translation from German of terms used by Järvi (1912 1914) in his comparison of heteropodid epigyna. The typical external structure of the epigynum (Fig. 8a) comprises a well-developed septum (= fossa) ('ems'), separated from the lateral sclerites ('els') of the epigynum by deep lateral invaginations ('li'). The invagination may extend to the anterior of the epigynum (Fig. 89), with the median portion of the septum being produced ventrally in a posteriorly projecting 'tongue'-shaped lobe (Fig. 68) or in a transverse 'bridge' (Figs 77, 81). Internally the invaginations support the afferent and efferent sperm ducts and spermathecae (Fig. 8b). In some groups the invaginations form a flanged support collar (Fig. 90).

Abbreviations and terminology used:

Abbreviations used are standard, but include the following: *s. s.* – *sensu stricto* (in

the strict sense, as redefined in this study); *s. l.* – *sensu lato* – (in the broad sense, as previously understood in the literature); AME – anterior median eye(s); ALE – anterior lateral eye(s); PME – posterior median eye(s); PLE – posterior lateral eye(s); AER – anterior eye row; PER – posterior eye row; MOQ – median ocular quadrangle, measured from outer margins of AME and PME; MOQP – posterior width of MOQ; MOQL – length of MOQ; MOQA – anterior width of MOQ; CW – carapace width at base of leg pair II; CL – carapace length; HW – head width; SW1 – widest sternum width, between coxae II; SW2 – anterior sternum width, between coxae I. Maxillae refers to the pedipalpal coxae.

Total length was measured from front of the AME lenses to the tip of the abdomen. Distances separating eyes were measured between nearest lens edges. All measurements, unless otherwise specified, are in millimetres. Heteropodids are unusually well-endowed with leg spines on most surfaces (30–33 spines on each leg). Leg spination in species descriptions/redescriptions only records variations from the schematic map (Fig. 7), modified from Griswold (1987a). Variations in spination are given in the following sequence: (anterolateral: dorsal: retrolateral). For example: left femur I(3:2:3). Ventral spination, although recorded, was not usually variable. Leg measurements are of the left hand side legs (unless otherwise stated). The cheliceral dentition formula used describes teeth of the retromargin followed by teeth of the anteromargin (i.e. 3:2).

Specimens studied or referred to are deposited in the following institutions. Acronyms used follow Arnett *et al* (1986). Material labelled with the acronym AMGS is kept at NMSA. Curators and/or loan officers are given in parenthesis:

AMGS	Albany Museum, Grahamstown, South Africa (Dr F. W. Gess, Mr A. Weaving)
AMNH	American Museum of Natural History, New York, USA (Dr N. Platnick)
AMSA	Australian Museum, Sydney, Australia (Dr M. R. Gray)
BMNH	The Natural History Museum, London, UK (Mr F. Wanless, Mr P. Hillyard)
CASC	California Academy of Sciences, San Francisco, USA (Dr W. Pulawski)
HNHM	Hungarian Natural History Museum, Budapest, Hungary
ISNB	Institut Royal des Science Naturelles de Belgique, Brussels, Belgium (Dr L. Baert)
MCSN	Museo Civico di Storia Naturale 'Giacoma Doria', Genoa, Italy (Dr G. Arbocco)
MCZC	Museum of Comparative Zoology, Cambridge, USA (Dr H. W. Levi)
MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland (Dr B. Hauser)
MNHN	Muséum National d'Histoire Naturelle, Paris, France (Dr M. Hubert, Dr J. Heurtault)
MRAC	Musee Royal de l'Afrique Centrale, Tervuren, Belgium (Dr R. Jocqué)
MWNH	Museum Wiesbaden, Germany (Dr M. Geistardt)
NHMV	Naturhistorisches Museum Wien, Austria (Dr J. Gruber)
NHRS	Naturhistoriska Riksmuseet, Stockholm, Sweden (Dr T. Kronestedt)
NMBA	National Museum, Bloemfontein, South Africa (Mr L. Lotz)
NMBZ	National Museum of Natural History, Bulawayo, Zimbabwe (Ms M. FitzPatrick, the late Ms J. Minshull)

NMSA	Natal Museum, Pietermaritzburg, South Africa
OXUM	Hope Entomological Collections, University Museum, Oxford, UK (Dr I. Lansbury)
PPRI	Plant Protection Research Institute, Pretoria, South Africa (Dr A. S. Dippenaar-Schoeman)
SAMC	South African Museum, Cape Town, South Africa (Dr V. B. Whitehead, Ms C. Car, Mrs M. Cochrane)
SMFD	Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt, Germany (Dr M. Grasshoff)
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany (Dr W. Schawaller)
SMWH	State Museum, Windhoek, Namibia (Ms E. Griffin)
TMSA	Transvaal Museum, Pretoria, South Africa (Mr W. Haacke, Mrs L. Brown)
USNM	United States National Museum of Natural History, Washington D.C., USA (Dr J. Coddington)
UZMD	Universitets Zoologiske Museum, Copenhagen, Denmark (Dr B. Petersen)
ZMHB	Museum für Naturkunde der Humboldt Universität, Berlin, Germany (Dr M. Moritz)
ZMPA	Instytut Zoologii PAN, Warszawa, Poland (Dr A. Slojewska)
ZMUH	Zoologisches Institut und Zoologisches Museum, Universität von Hamburg, Germany (Dr G. Rack)
ZSMC	Zoologische Staatssammlung, München, Germany (Dr & Mrs B. Baehr)

Geographical localities:

For simplicity, South African provinces referred to in the text reflect the older (prior to April 1994) four-province system (Cape, Natal, Transvaal and Orange Free State) and two traditionally accepted regions within two of the provinces (Zululand – the Natal region north of the Tugela River – and Transkei – the old Cape region between the eastern Cape and Natal). Use is also made of geographical regions within the provinces (e.g. eastern Cape, western Cape, north-western Cape, northern Transvaal) for descriptive purposes.

NATURAL HISTORY OF *PALYSTES*

Habitat and behaviour

Like the other larger tropical heteropodids of South America, Africa, Madagascar and Indo-Australasia, *Palystes* species are nocturnal hunting spiders. During the day, adults are inactive, sheltering under loose bark or stones, or in any suitable crevice.

In the field, *Palystes* species are usually associated with canopy and open forest on moist, sea-ward aspects of inland mountains, wooded gorges and river valleys, or with low altitude forest and scrub on the coastal plains abutting the Indian Ocean. *P. superciliosus* and *P. johnstoni* both also occur in savannah woodland. Night-active wandering hunters, they retire into rock, plant or tree crevices, and under loose bark during the day, relying on immobility and cryptic colouring to escape detection. They are particularly easily collected in plantation pockets of pine trees in indigenous forest where they are found under the loose bark of felled logs or dead branches.

Label data show that three species are commonly encountered in suburban gardens and homes in the higher rainfall areas of southern Africa: *P. castaneus* in the south-western Cape, particularly the Cape Peninsula including Cape Town; *P. superciliosus* in Mozambique, Swaziland, Transkei, the Transvaal, Natal, and southern and eastern Cape provinces of South Africa; *P. johnstoni* in Malawi and Zimbabwe.

Reproduction

Observations of *P. superciliosus* mating have been recorded by Fourie (1978), and Croeser (1979). Cayton-Boxall (1988) observed mating by *Palystes* but did not identify the species. Straddling of the female by the male during mating has been observed by myself and by Fourie.

Cayton-Boxall noted that the male approached the female from alternate sides during mating but did not record straddling. Fourie noted that once the male had mounted the female, she turned her abdomen slightly to orientate the epigynum towards the direction of the approaching palp, while the male gave its palp a slight twist to engage it to the epigynum. The bulb contents were then rotated 'with a fast screw-turning action', followed immediately by distension, then gradual contraction of the bulb. The bulb was distended and contracted between 25 to 30 times before the palp was withdrawn and preened through the chelicerae. The male then changed position to present the other palp, the female re-orientating her epigynum in response to light leg taps on the abdomen. The process was repeated throughout the observation period (between six and seven hours). Contractions initially lasted 10 to 20 seconds but towards the end were slower (up to 5 minutes).

Warren (1926) estimated that a female *P. superciliosus* laid approximately 800 eggs during an 18–24 month life span, with about 100 eggs in the first egg sac, this number increasing to a peak of about 200 and then diminishing to about 40 per sac.

Both *P. castaneus* and *P. superciliosus* usually enclose each egg sac within fist-sized nest envelopes of tough, papery silk reinforced with leaves, twigs and other debris (Warren 1926, D'Ewes 1967, Croeser 1979); new nests being most often found during summer (Croeser). The nest may be suspended by reinforced 'cables' of silk in a shrub, in the thorny crown of a caulescent *Aloe* species (Liliaceae) (*pers. obs.*), or below an overhanging rock. The female remains in the vicinity of the nest for some time and will resuspend the nest if it is detached or disturbed (D'Ewes 1967, Croeser 1979, Yates 1968). The young *P. superciliosus* hatch some 17 days after the eggs have been laid (Warren 1926) and work their way through the walls of the egg sac about 4 days later. Warren observed that the young remain clustered on the nest for several weeks until their silk glands and alimentary canal are fully formed, being nourished by yolk stored in the abdomen. During this stage, when the spiderlings will also undergo their first ecdysis, the mother remains with the nest and 'very definitely guards her offspring'. Sibling cannivory has been observed towards the end of this period (Warren 1926, Croeser 1979), when the spiderlings begin feeding and dispersing. Aerial dispersal of the spiderlings by ballooning has not been observed. Warren also studied ecdysis (1925a), egg development (1929) and cellular division (1925b) in *Palystes*. Adulthood in a laboratory-reared female was reached in 10 months (Warren 1926).

Diet

Specimens of *P. superciliosus* kept by me in the laboratory were successfully fed on cockroaches, crickets, grasshoppers, moths and *Tenebrio molitor* larvae. Prey is caught on foot without the aid of silk, and eaten directly, without silk wrapping. Warren (1923) twice observed *P. superciliosus* eating common dwarf geckos, *Lygodactylus capensis*, in Pietermaritzburg. One gecko measured 70 mm in length, the other 45 mm. All that was left of the smaller specimen after about two and a half hours of feeding by the spider was a discarded blackish, rounded ball about 6 mm in diameter. It contained some skin scales and connective tissue, as well as a few vertebrae and long limb and jaw bones, the latter still with their teeth. The bones were clean and empty of marrow and pulp.

Natural enemies

Apart from the spectrum of animal life (birds, small mammals and frogs amongst others) which include spiders in their diet and which are likely facultative predators of *Palystes*, pompilid wasps (Hymenoptera: Pompilidae) and mantispids (Neuroptera: Mantispidae) have been identified as specialised predators and parasitoids of *Palystes* species.

Gess & Gess (1980) observed that the large pompilid *Tachypompilus ignitus* exclusively preyed on species of *Palystes*. Dr F. W. Gess (*pers. comm.*, 1988) also recorded predation of *Palystes* species by several species of another pompilid, *Cyphononyx* (*basalis*, *decipiens*, and *flavicornis*) in the eastern Cape and Karoo.

The mantispid *Climaciella erichsoni* has been collected from a *Palystes* nest in Port Elizabeth and several unidentified mantispids have been reared from egg sacs of *P. superciliosus* collected in the field in Natal (NMSA).

Medical importance

Only a few clearly established cases of envenomation in man by species of *Palystes* in South Africa are known (D'Ewes 1964, Newlands 1975, Newlands & Martindale 1981, *pers. records*). The symptoms are very mild (initial burning pain for a few minutes at the site of the bite, followed by slight swelling or barely perceptible oedema with no further symptoms). In an exceptional case, D'Ewes (1964) reported a woman bitten three times on the arm in Cape Town. Symptoms included dizziness, vomiting, swelling of the arm and of the armpit glands, and inflammation of the bite site. For some years *P. superciliosus* was placed on the list of potentially harmful South African arachnids (reviewed by Newlands 1975), following a misinterpreted experiment by Steyn (1959) in which a guinea-pig died after being bitten on the nose. Later Newlands & Martindale (1981) established in a series of controlled experiments that the cause of death had been shock, not envenomation, and that while the bite of the spider could be irritant, it was not dangerous. A label with an adult female of *P. johnstoni* collected in Umtali, Zimbabwe, in June 1982 bears the following note: '...Office – bit man – chest pains, difficulty in breathing. Treated with antihistamines...'.

TAXONOMY

SUBFAMILY PALYSTINAE

Palysteae Simon, 1897a: 62. Type genus designated: *Palystes* L. Koch, 1875.

Palysteinae: Petrunkevitch (1928: 54); Bonnet (1958: 3308).

Palystinae: Roewer (1954: 725).

Palisteinae: Petrunkevitch (1928: 159) [*lapsus*].

Remarks: Simon (1897a) was the first to recognise and describe a supra-generic group based on *Palystes* (Palysteae in his clubionid subfamily Sparassinae). This included three genera: *Palystes*, the type genus, from Africa and Australia, *Tychicus* Simon, 1880, from Malaysia, and *Micrommata* Latreille, 1804, from Europe. Petrunkevitch standardised the subfamily name, converting Palysteae to Palysteinae (1928). The spelling of the subfamily name has not been consistent. Bonnet (1958) followed Petrunkevitch, referring to the subfamily as Palysteinae, while Roewer (1954) cites it in its correct form as Palystinae.

Simon distinguished the Palysteae from other heteropodid genera chiefly on the proportions of the eyes: the anterior laterals being considerably larger than the anterior medians; the posterior eyes all sessile, similar in size to each other and equidistant. Järvi (1912–1914) modified Simon's Palysteae by transferring *Micrommata* to his new group Micrommateae. Two other genera were subsequently added to the Palystinae by Roewer in his catalogue (1954): *Exopalystes* Hogg, 1914, from Papua New Guinea, and *Palystella* Lawrence, 1928, from South Africa.

Examination of type material during the present study revealed that Palystinae *s. l.* contained genera with affinities elsewhere, and that the type genus, *Palystes s. l.*, was also paraphyletic. Consistent differences in characters between the African and Indo-Australasian species of *Palystes s. l.* are summarised in Table 1.

The character differences between the African and Indo-Australasian species previously assigned to *Palystes*, are recognised at generic level in this study. The generic name *Palystes* is now reserved for those species here considered congeneric with the type species, *P. castaneus*, of the western Cape Province of South Africa. Palystinae has accordingly been redefined and now includes only *Palystes s. s.* (as redefined and revised in this study), *Parapalystes* gen. n. of the western Cape, *Anchonastus* Simon (transferred from the Staianinae) from central Africa, and *Panaretella* Lawrence, (transferred from the Heteropodinae) of south-eastern Africa.

Most of the Indo-Australasian species now excluded from *Palystes s. s.* have been transferred from the Palystinae to the Heteropodinae: to *Heteropoda* and to an allied resurrected Oceanian genus, *Gnathopalystes* Rainbow, 1899. Also transferred from the Palystinae are the southern African genus *Palystella* Lawrence (which belongs in a group with *Orchestrella* Lawrence) and the Indo-Australasian genera *Exopalystes* and *Tychicus*. Subfamily placement of these genera, which do not appear to belong in either Palystinae or Heteropodinae, must await further revisory work.

Palystinae and Heteropodinae appear to be closely related. Apart from similarities in size, behaviour, habitat choice and general body proportions, the two subfamilies also share characters that include the arrangement and proportions of the eyes (differing only in the position and orientation of the AME, and in the PLE which are raised and larger than the PME in some genera of Heteropodinae), the shape of the tarsal slit sense organs (Fig. 15), and the basic arrangement of leg spines and the

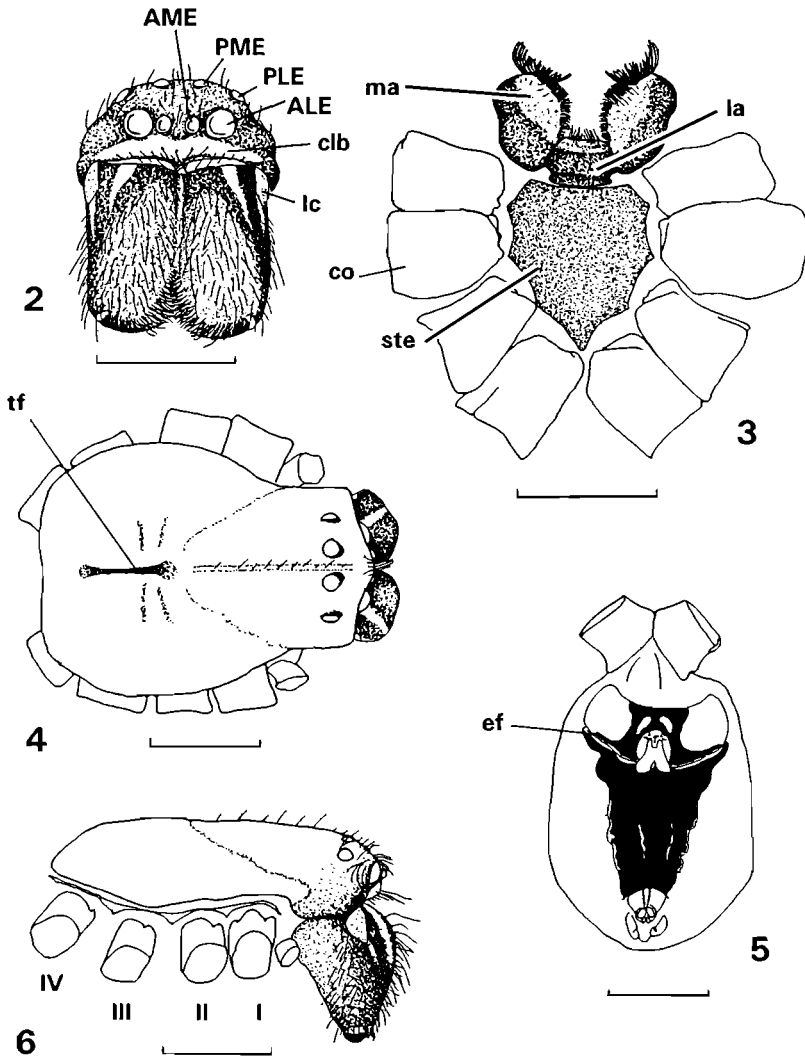
shield-like marking of the venter. For this reason earlier workers placed a number of heteropodine species in Palystinae. Heteropodinae (discussed later) differ in a number of characters, however, and all members have microdenticles on the fang furrow floor, which appears to be a synapomorphy for Heteropodinae.

TABLE 1

Differences between *Gnathopalystes* Rainbow, 1899, gen. resurr. and *Palystes* s. s. Koch, 1875.

<i>Gnathopalystes</i>	<i>Palystes</i> s. s.
<ul style="list-style-type: none"> • Median septum lobe covered. • Lateral sclerites contiguous anteriorly. 	<p>Female epigynum:</p> <ul style="list-style-type: none"> • Median septum lobe well exposed. • Lateral sclerites well separated anteriorly.
<ul style="list-style-type: none"> • Domed posterior to PER. • Slopes downward anterior to fovea, fovea steeply inclined. 	<p>Carapace:</p> <ul style="list-style-type: none"> • Flat posterior to PER. • Slopes downward posterior to fovea, fovea horizontal.
<ul style="list-style-type: none"> • AER procurved (AME with upper rims on a line with those of ALE). • AME strongly tilted upwards. 	<p>Eye group:</p> <ul style="list-style-type: none"> • AER straight (AME on a common median line to ALE). • AME only slightly tilted upwards.
<ul style="list-style-type: none"> • Patellae with one, (retrolateral) spine. • Tibiae dorsally with no spines. 	<p>Leg spination:</p> <ul style="list-style-type: none"> • Patellae with two (retro- and antero-lateral) spines. • Tibiae dorsally with two spines.
<ul style="list-style-type: none"> • Sexual dimorphism of leg length – males with proportionately longer legs than females. 	<p>Leg length:</p> <ul style="list-style-type: none"> • No sexual dimorphism of leg length apparent.
<ul style="list-style-type: none"> • Retromargin of fang furrow with five teeth (the fifth very small basal tooth sometimes missing). • Anteromargin with two teeth. • Fang furrow with pad of microdenticles (median teeth). 	<p>Chelicerae:</p> <ul style="list-style-type: none"> • Retromargin with three teeth. • Anteromargin with three teeth. • Fang furrow smooth.
<ul style="list-style-type: none"> • Uniform brown. 	<p>Sternum:</p> <ul style="list-style-type: none"> • Black or with one or more dark transverse bands.
<ul style="list-style-type: none"> • Slightly wider (1.1 X) than long. • Bluntly conical apex. • High waist. 	<p>Labium:</p> <ul style="list-style-type: none"> • Usually much wider (1.2–1.5 X) than long. • Widely truncate apex. • Low waist.

Diagnosis: Palystinae s. s. appears to be monophyletic, defined by the synapomorphy of the unique arrangement and proportions of the AER (Fig. 2). The AER is straight with the AME (the smallest eyes) on a common median line with the ALE (the largest eyes). The AME are directed forwards and only slightly tilted upwards. In their apparent closest relatives, the Heteropodinae, the AER is procurved with the upper lens margins of the AME on a common line with those of the ALE, with the AME strongly tilted upwards. Palystinae are further defined by common possession of the following characters:



Figs 2–6. *Palystes castaneus* (Latreille, 1819), female. 2. Head from front (AME = anterior median eye; PME = posterior median eye; PLE = posterior lateral eye; ALE = anterior lateral eye; clb = clypeal band; lc = lateral condyle). 3. Sternum from below (ma = maxilla; la = labium; co = coxa; ste = sternum). 4. Carapace, dorsal view (tf = thoracic fovea). 5. Abdomen from below (ef = epigastric furrow). 6. Carapace from side (showing leg bases I–IV). (SAMC B9129, Cape Town). Scale = 4 mm.

Leg spination pattern (Fig. 7), including one or two dorsal spines on tibiae I–IV of both sexes; ventral banding of tibiae I–IV (absent in *Panaretella*); cheliceral dentition (Figs 11, 94) 3:3 with three equal sized retromarginal teeth, three subequal anteromarginal teeth (median largest, basal smallest) and with fang furrow floor smooth, without microdenticles (Heteropodinae 4:3, with microdenticles on fang

furrow floor); ALE>>PLE=PME>/=AME; PER straight or slightly recurved, eyes equidistant, sessile; pigmented sternum either black, black with a posterior pale to yellow patch or with 1–3 dark to black transverse bars, latter sometimes coalescing to cover most of sternum (except *Panaretella* with an unmarked sternum); labium wider than long, low-waisted; epigynum with ventrally exposed median septum (Figs 8, 71, 81, 110); epigynum internally with sperm ducts straight or hooked, but not coiled more than 360 on their axes; embolus (Figs 9, 41, 80, 112) straight or reflexed less than 275, not coiled.

Distribution: Central, eastern and southern Africa.

Key to genera of Palystinae s. s.

- 1 Sternum and coxae ventrally with fine black cuticular spots against pale white to yellow-brown background; ALE only slightly larger than other eyes; PER 1.6 X wider than AER; carapace only slightly (1.2 X) longer than wide; abdomen posteriorly with a black marking on either side (east coast and interior of South Africa) **Panaretella** Lawrence
- Sternum and coxae marked otherwise; ALE much (1.6 X) larger than other eyes; PER 1.1–1.2 X wider than AER; carapace much (at least 1.4 X) longer than wide; abdomen posteriorly without lateral black markings 2
- 2(1) Caput domed posterior to PER; sternum black except for white to yellow posterior or anterior third (Fig 115); coxae each ventrally with 2–5 round, dark marks (Fig 115) (eastern and western Cape Provinces of South Africa, including Namaqualand) **Parapalystes** gen. n.
- Caput sunken or flat; sternum entirely black or with one or more transverse dark bands; coxae ventrally uniform in colour or partially invaded by the solid dark lateral markings of the coxae 3
- 3(2) Carapace sunken posterior to PER; carapace, abdomen and legs with pilose tufts of setae; posterior spinnerets removed from, and much longer than, anterior spinnerets (Zaire and surrounding regions of central and west Africa) **Anchonastus** Simon
- Carapace flat posterior to PER (Fig. 6); without tufts of pilose setae; posterior and anterior spinnerets adjacent, and similar in length (eastern and southern Africa) **Palystes** L. Koch

Palystes L. Koch, 1875

Helicopsis L. Koch, 1874: 495 [preoccupied].

Palystes L. Koch, 1875: 701. Type species: *Palystes frenatus* L. Koch, 1875 [by subsequent designation of Simon (1897a: 66)].

Etymology: Koch (1875) did not give a derivation for *Palystes*. The name is probably a mis-transliteration of the masculine Latin noun *palaestes* or Greek *palaistes* (meaning wrestler) in view of the spiders' laterigrade arrangement of legs which Koch noted were long and powerful.

Remarks: L. Koch (1874) proposed the name *Helicopsis* for a new genus in his introductory key to the Philodromidae. In 1875 he noted that the name was

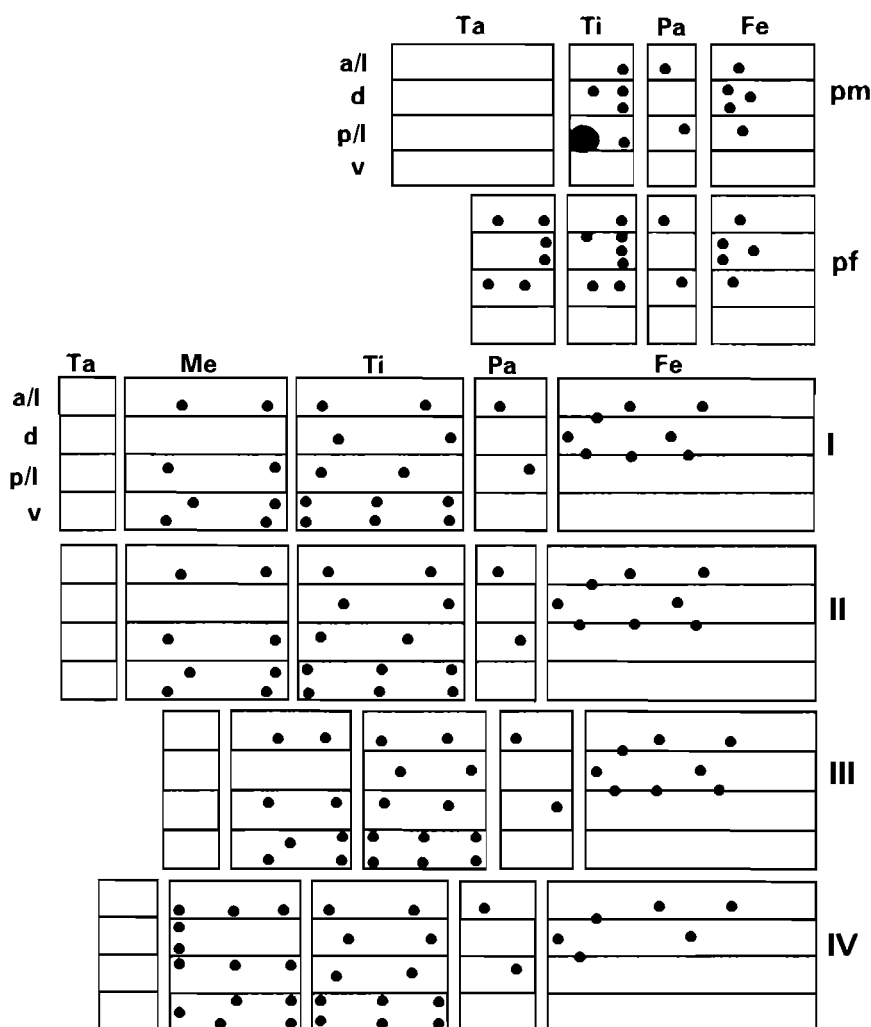


Fig. 7. Schematic map of insertion of leg spines in *Palystes*. Left hand legs of a typical female *P. castaneus* (Latreille, 1819) are mapped from the anterior to the posterior (I-IV). Leg surfaces are divided in four planes (a/l = anterolateral; d = dorsal; p/l = retrolateral; v = ventral) for consecutive segments (Fe = femur; Pa = patella; Ti = tibia; Me = metatarsus; Ta = tarsus). Spination for left hand pedipalps of male (pm) and female (pf) are mapped at the top. [Mapping method modified from Griswold (1987a).]

preoccupied in Lepidoptera and replaced it with *Palystes*. He included four species in the new genus: *P. pinnotherus* (Walckenaer, 1837) from Oceania, and three new species: *P. ignicomus* from New Ireland (Oceania), and *P. frenatus* and *P. superciliosus* from South Africa. Koch did not designate a type species for *Palystes*. Simon (1880) recognised one of the originally included species, *P. frenatus*, as a junior synonym of *Thomisus castaneus* Latreille, 1819 and later (1897a) designated a

type species: 'TYPUS: *P. castaneus* Latr.(*P. frenatus* L. Koch).' Under Article 69a (v) of the *Code* this constituted designation of *P. frenatus* as the type species of the genus (and not *Thomisus castaneus* which was not one of the originally included taxa). The type material of *P. frenatus* has not been found, but the two names are clearly synonymous based on agreement of the original descriptions, gender and provenance. In view of the importance of the identity of the type species in this revision, the adult female type specimen of *Thomisus castaneus* Latreille, 1822, is now designated as neotype for *P. frenatus*, making the two names objective synonyms. This clearly establishes the identity of the type species and firmly links it to that of the senior synonym, *Palystes castaneus*. This serves to stabilise the name since, following Simon's (1897a) designation of *Palystes castaneus* as the type species, *P. castaneus* has always been cited by subsequent authors as the type species of the genus.

Examination of all the available type material of the 38 species previously assigned to *Palystes* revealed, apart from a number of misplaced species belonging in other genera, four apparently natural groups, two African and two Indo-Australasian. A number of morphological characters consistently separate the four groups, and the differences are here recognised at generic level. The genus *Palystes* s. l. is accordingly split into: 1) *Palystes* s. s., reserved for those African species considered congeneric with the type species *Palystes castaneus* (Latreille); 2) *Parapalystes*, a new genus described below, from the interior of the Cape Province of South Africa, for those species considered congeneric with its type species *Parapalystes euphorbiae* sp. n.; 3) *Gnathopalystes* Rainbow, 1899, previously synonymised by Simon (1903) under *Palystes* and here resurrected to accommodate those extra-African species considered congeneric with the type species, *Gnathopalystes ferox* Rainbow; 4) a probable new genus closely allied to *Heteropoda* Latreille, 1804 (at present the species belonging here have been placed in *Heteropoda* pending revision of this genus). The differences between *Palystes* s. s. and two of the genera, *Parapalystes* and *Gnathopalystes*, are summarised in Tables 1 and 2.

Of the four species originally included in *Palystes* by L. Koch, the two southern African species, *P. frenatus* and *P. superciliosus*, are retained in *Palystes* s. s. Of the two included Australasian species, *P. ignicomus* is transferred to *Gnathopalystes* while *P. pinnotherus* is considered *incertae sedis*.

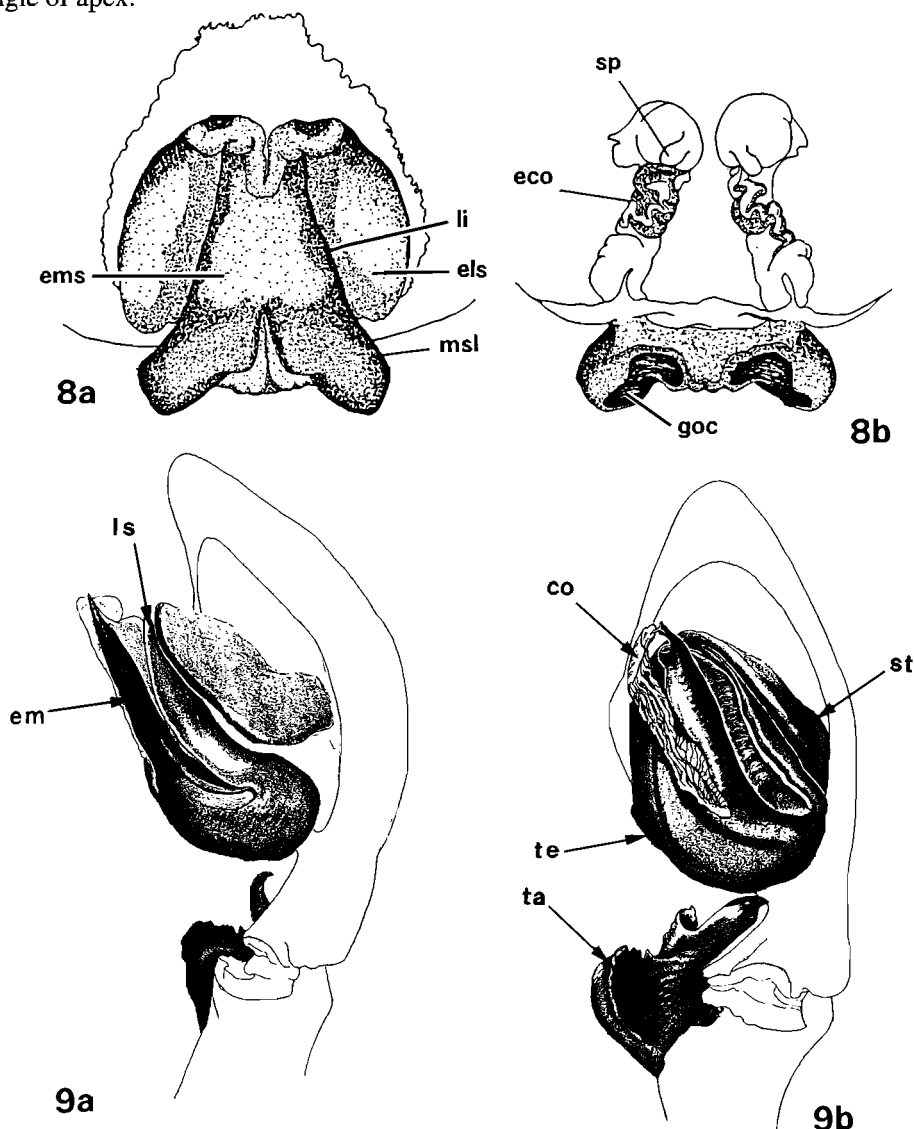
Diagnosis: Two distinct longitudinal stripes of white or yellow setae present at outer margin of each cheliceral base (Figs 2, 4, 6), and a broad clypeal 'moustache' of closely adpressed white to yellow setae 'CLB' (Fig. 2) with projecting elongate dentoid scales on their underside (Fig. 10). The 'moustache' and cheliceral markings are synapomorphies unique to *Palystes* and *Parapalystes*. *Palystes* differs from *Parapalystes* in the shape of the carapace (flat, not domed posteriorly), orientation of thoracic fovea (parallel to body plane, not sloping downwards on posterior declivity), coxal markings (no blotched-spot markings ventrally as in Fig. 115), sternum colour (no yellow-brown patch across posterior of black sternum), the single tibial apophysis on the male pedipalp (as opposed to two spur-like apophyses with additional ridges as in Fig. 113), and in the dorsal spination of the tibiae of legs I–IV (two basal and apical spines instead of a single apical spine).

Description:

Medium to large, light to dark brown hunting spiders, up to 30 mm in body length, and with an extended leg span reaching 110 mm.

Carapace: (Figs 4, 6) Ovate, flat, sloping downwards posteriorly, posterior to thoracic fovea; densely covered with chestnut-brown setae (*ca* 0.4 mm long) and with numerous, scattered, longer, paler, attenuate setae up to 1.4 mm long in vicinity of eyes, those above and between upper margins of ALE projecting forwards and converging to form a loose peak of hairs extending beyond anterior margin of carapace; head region parallel-sided, clearly delineated by striae posteriorly; fovea (Fig. 4), from which several faint, depressed, striae radiate, a straight, longitudinal, narrow furrow occupying approximately 0.27 X of CL, flaring into small shallow depressions at either end, anterior to posterior declivity. *Eyes* (Figs 2, 4, 6): PER straight, occupying approximately 0.6 X HW and approximately 1.2 X wider than AER; AER recurved from above, straight from front; ALE>>PLE=PME>=AME, with ratio range AME:ALE:PME:PLE = 1:1.3–1.7:0.9–1.2:0.9–1.2; MOQ as long as wide to slightly longer than wide, narrowed anteriorly; AME slightly tilted upwards, on either side of slightly raised tubercle between ALE and on common median line with ALE, other eyes sessile; immediately anterior to each of PE a small patch of darkened cuticle with numerous, short adpressed setae and similar patches immediately posterior to each of anterior eyes. *Clypeus* (Fig. 2): Vertical, narrow, 1.1 X diameter AME in height, densely covered with short, blunt-tipped, white to off-white adpressed setae (Fig. 10) with projecting teeth on their lateral margins forming white band more than 0.6 X width of clypeus, tapering at either end, with 2, irregular, rows of long, attenuate, bristle-like, pale setae among adpressed white setae; ventral row of approximately 14 convergently directed setae, increasing in length from near lateral margins of clypeal band to centre, 0.3–1.0 mm long, and short, dorsal row of four longer setae 1.5–1.9 mm long. *Chelicerae* (Figs 2, 4, 6): Robust, dark to black, 1.7–1.9 X longer than wide, profusely covered with long, attenuate, dark and chestnut coloured bristle-like setae and with 2 longitudinal white setose stripes at their external margins (Fig. 2); fang furrow (Fig. 11) smooth, without denticles; retromargin of fang furrow with 3 equidistant large teeth, similar in size or basal largest; anteromargin with 3 teeth, median largest, basal smallest (Fig. 11), occasionally additional small teeth present in individual specimens (as in male paratype of *P. karoensis*, Fig. 48); retromargin of fang furrow with fringe of long, red scopular hairs external to teeth, anteromargin with shorter, denser scopula external to teeth. *Labium:* 1.2–1.5 X wider than long, broadly truncate apically; middle widest, sides convergent but apex broadly truncate; posteriorly with scattered attenuate setae, apical margin pale with approximately 20 long, attenuate, reddish setae up to 1.2 mm long. *Sternum:* 1.1–1.4 X longer than wide; shield-shaped, nearly flat, scallops shallow, sigillae not apparent, widest between coxae II, posteriorly tapering, blunt-tipped; densely setose and either solid black or with 1–3 dark transverse bars of dark setae and darkly pigmented cuticle against background of lighter cuticle and light to medium brown setae. *Maxillae* (Fig. 3): Approximately 1.5 X longer than wide, inner margins straight proximally, diverging distally, exterior margins bulging outwards distally; 3 groups of red to orange scopulae with blunt-

tipped bristles present (well-developed, flared, apical scopula with long setae; inner, sub-apical scopula of shorter, stouter setae; scopula of even shorter, finer setae forming dense mat on inner margin of maxillae); serrula present, linear, at outer angle of apex.



Figs 8–9. *Palystes castaneus* (Latreille, 1819). 8a. External female epigynum (ems = median epigynal septum; els = lateral sclerites of epigynum; li = lateral invagination separating septum from lateral sclerites; msl = posteriorly produced lobes of median septum). 8b. Internal female epigynum (goc = gonopore cavity of septum; eco = epigynal conductor of afferent sperm duct; sp = spermatheca lying dorsal to bulbous invagination of efferent sperm duct) (SAMC B9129, Cape Town). 9a. Anterolateral aspect, left male pedipalp (em = embolus; ls = lateral sclerite of tegulum forming a support flange to embolus). 9b. Ventral aspect, left male pedipalp (co = membranous conductor; st = sub-tegulum; te = tegulum; ta = tibial apophysis) (NMSA, Hout Bay, 3.v.1984).

Legs: Formula (12)43 with Leg I = II, or one fractionally shorter than other; well-armed with strong, erectile black spines (mapped in Fig. 7); significant spines are femora I–III(3:2:3), femora IV(3:2:1 or 3:2:2), patellae I–IV(1:0:1), tibiae I–IV dorsally with proximal and distal spine; coxae usually dark anterolaterally, unmarked ventrally or basal half dark or completely dark, never spotted; femora ventrally with dark brown to black markings or unmarked; tibiae ventrally black interrupted by median and apical broad pale to white transverse band; metatarsi and tarsi ventrally with well-developed scopulae comprising greyish, blunt-tipped setae covered for most of their length with hooked setules (Fig. 13); otherwise all surfaces densely covered with setulate attenuate light and dark brown setae; pair of pectinate tarsal claws terminally, each pair subtended by well-developed tarsal claw scopula comprising finely setulate, flattened, spatulate, apically-bisected setae (Fig. 14); trichobothria (Fig. 17) numerous, no discernible pattern except for those arranged in ‘V’ pattern distally on dorsal surface of tarsi, arms of ‘V’ directed distally; tarsal organ dorsal, bulbous, recessed (Fig. 18); prominent lip-shaped slit sense organs (Fig. 15) laterally on dorso-retrolateral and dorso-anterolateral surfaces of all tarsi.

Abdomen: Dorsally with clearly outlined brown to black cardiac marking present or absent; ventrally with dark to black transverse crescent marking immediately posterior to epigastric groove and generally with additional black, brown or white markings between crescent and spinnerets; posterior and anterior spinnerets two segmented, median spinnerets with a single segment; anterior spinnerets (Fig. 20) stout, larger, wider and longer than posterior and median spinnerets; colulus absent; anal tubercle prominent.

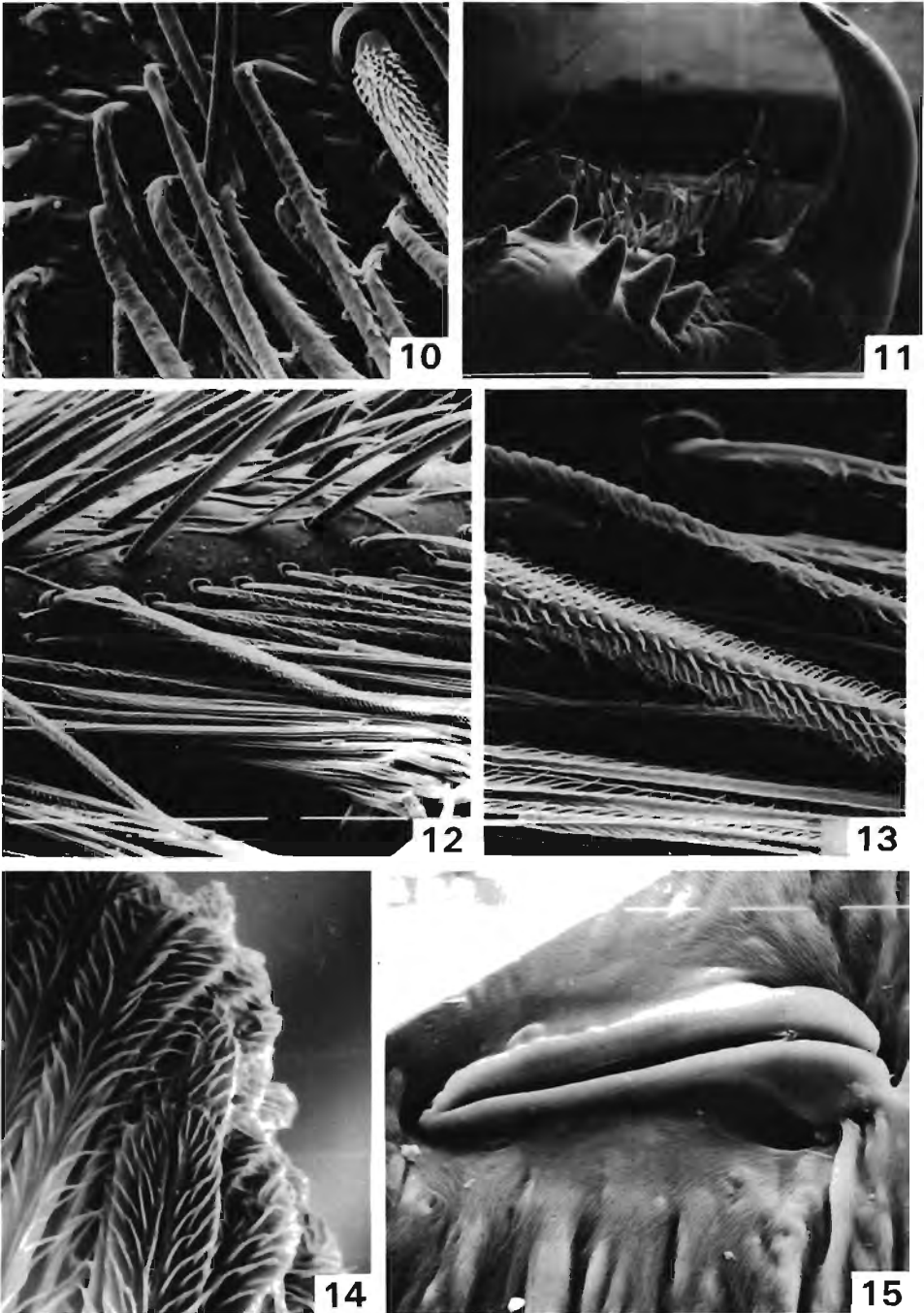
Epigynum: Externally (Fig. 8a), longer than wide, lateral sclerites widely separated, large well-developed median septum present. Internally (Fig. 8b), sperm ducts heavily sclerotised; spermathecae prominent, produced, straight or reflexed (Fig. 47), supported by invagination which may form supporting collar (Fig. 78), which may be interrupted medially (Fig. 53).

Male pedipalp: Embolus (Fig. 9a) sturdy, as long as tegulum, straight (Fig. 9a) or reflexed (Figs 80, 93), flattened on a vertical plane to the palp (Figs 9a, 36, 54) or along the same axis (Figs 92, 99), recurved less than 270 distally over tegulum; conductor (Fig. 9b) well developed, fragile, diaphanous or white, not sclerotised, distally enfolding apical sclerite of embolus. Tibial apophysis single, trilobate (Fig. 9b), bilobate (Fig. 56), flattened (Fig. 41) or an entire spur (Fig. 91); no additional apophyses.

Distribution: Central, eastern and southern Africa.

Key to species of *Palystes* s. s.

- | | | |
|------|--|----|
| 1 | Female | 2 |
| – | Male | 15 |
| 2(1) | Epigynal septum (Figs 77, 81) deeply excavate anteriorly and with rectangular ridge posteriorly which is sometimes produced; femora ventrally dark to black with distal broad yellow band..... | 3 |
| – | Epigynal septum not as above; femora ventrally mottled or with clear white spots..... | 7 |



Figs 10–15. Scanning electron micrographs of cuticular detail and setae of a female *Palystes castaneus* (Latreille, 1819), from Newlands, Cape Town. 10. Clypeal setae (750 X). 11. Left cheliceral teeth and fang (25 X). 12. Dorsal metatarsal setae above and ventral scopular setae below (155 X). 13. Enlargement, showing hook-tipped setules of scopular setae (475 X). 14. Tarsal scopular setae (1365 X). 15. Slit-sense organ on dorso-retrolateral surface of tarsus (1050 X).

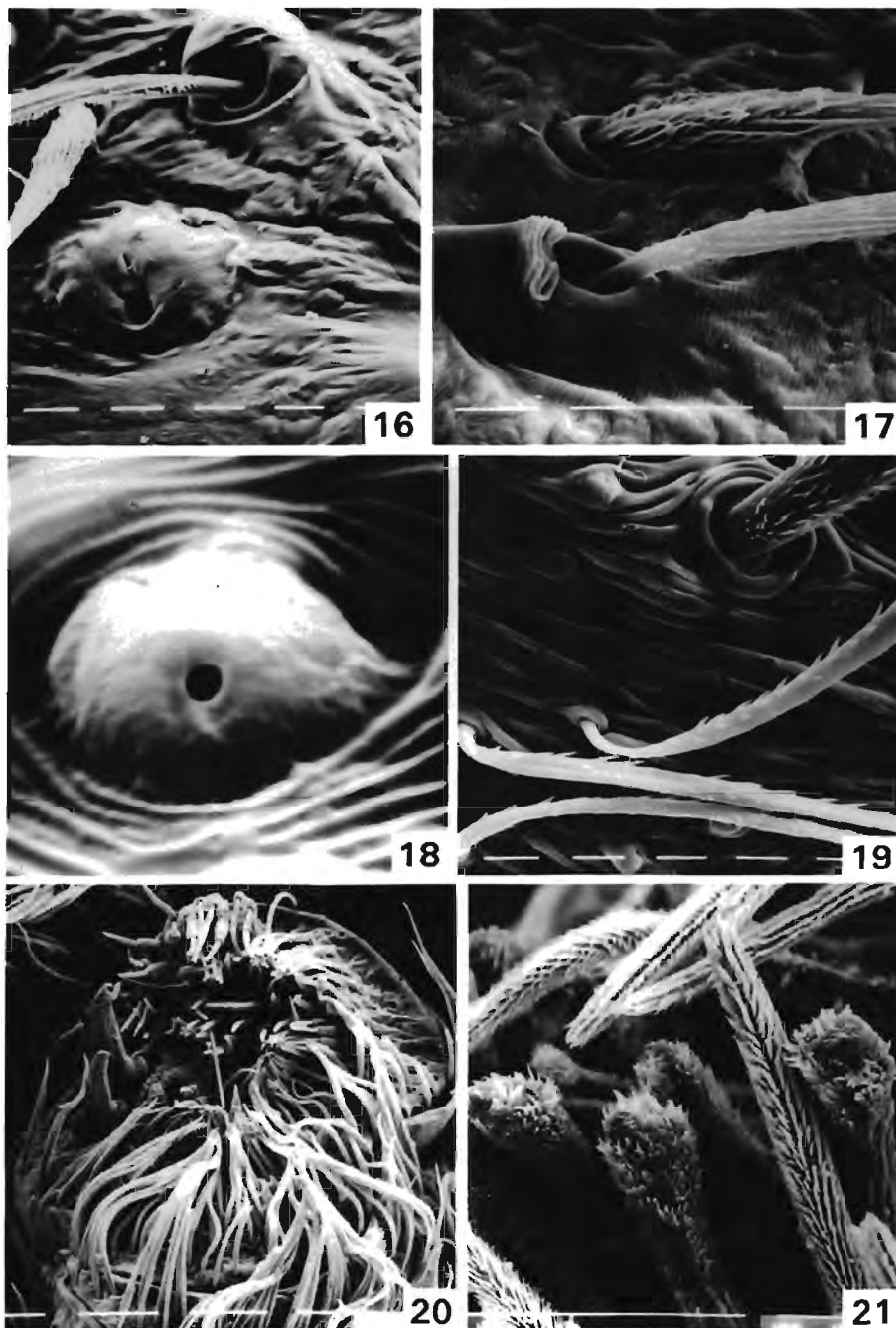
- 3(2) Sternum with dark transverse bar between coxae I and II (sometimes with 2 fainter bars posterior to it); abdomen ventrally with faint grey to black bell-shaped mark between black crescent and spinnerets; septum ridge (Fig. 77) not produced posteriorly; spermathecae and penultimate sperm ducts (Fig. 78) dorsal to supporting collar, lobes of collar encircle pre-penultimate ducts (Africa south of Cunene and Limpopo rivers).....**superciliosus** L. Koch
- Sternum with 2 or more dark transverse bars, or entirely black; abdomen ventrally with large to small dark brown spots between dark brown to black crescent and spinnerets; septum ridge (Fig. 81) produced posteriorly; spermathecae and penultimate ducts ventral or internal to supporting collar lobes, lobes not encircling ducts.....4
- 4(3) Sternum with 2 chevron-like dark transverse bars; spermathecae (Fig. 98) slender, long, unattached to supporting collar and lying ventral to collar lobes (not visible dorsally); penultimate sperm ducts external to collar lobes (Malawi and Zimbabwe).....**johnstoni** Pocock
- Sternum with 3 dark transverse bars (Fig. 85), posterior bar strongly recurved, or sternum entirely black; spermathecae short, embedded in supporting collar lobes; penultimate sperm ducts internal or anterior to collar lobes5
- 5(4) Abdomen ventrally (Fig. 88) with brown spots coalescing medially to form a solid, laterally spotted, irregular mark between crescent and spinnerets; spermathecae (Fig. 82) short, stout and embedded internally in lateral lobes of supporting collar; afferent sperm ducts immediately posterior to spermathecae and internal to lobes of supporting collar, visible dorsally (eastern Zaïre, Rwanda, Uganda, Tanzania and northern Malawi)**elliotti** Pocock
- Abdomen ventrally spotted but spots not coalescing to form mesal marking as above; epigynum internally (as in Fig. 105) similar to above but afferent sperm ducts anterior to spermathecae and anterior or external to lobes of supporting collar, usually not visible dorsally6
- 6(5) Sternum entirely black; afferent sperm duct external to lobe of supporting collar (Fig. 105); lobe strongly produced anteriorly to spermatheca and penultimate sperm ducts (Warburton and Ermelo districts, south-eastern Transvaal, to Ndumu, northern Natal, South Africa)
ansiedippenaarae sp. n.
- Sternum with dark brown to black bars (Fig. 95); afferent sperm duct (Fig. 90) embedded anteriorly on lobe of supporting collar; lobe not produced as above (Kenya and Tanzania)**hoehneli** Simon
- 7(2) Sternum entirely black; femora I–II mottled without distinct markings; abdomen laterally mottled, without distinct markings, ventrally with black bell-shaped mark (Fig. 5) or black-framed yellow panel between black crescent and spinnerets; septum (Figs 8a, 23 & 32) posteriorly produced laterally (western Cape, South Africa)8
- Sternum (Fig. 45) usually with two mesally interrupted transverse dark bars (sometimes faint, sometimes with an additional short longitudinal bar mesally); femora I–II ventrally with clear white spots; abdomen laterally with clear white spots, ventrally (Fig. 45) rich red to orange-red with distinct clear

- white spots between black crescent and spinnerets (indistinct in specimens from Amatola Mountains, eastern Cape, South Africa); septum (Figs 39 and 68) with transverse or posteriorly produced median lobe10
- 8(7) Abdomen ventrally with broad, transverse, pale brown mark between black crescent posterior to epigastric groove and dark patch anterior to spinnerets; septum (Fig. 32) convex, posteriorly flattened but not divided mesally, with pair of lateral swellings; spermathecae (Fig. 33) elongated, inserted immediately posterior to supporting bulb and directed internally (Hottentots Holland Mountains, western Cape, South Africa)**stilleri** sp. n.
- Abdomen ventrally with solid dark brown to black shield marking between epigastric groove and spinnerets; epigynum not as above9
- 9(8) Epigynum externally with septum (Fig. 23) short, wide, laterally excavated, with pair of lateral swellings immediately anterior to it; internally, efferent sperm ducts (Fig. 24) inserted ventrally below bulbous lobes of flexible, anteriorly interrupted, collar; spermathecae inserted externally to collar (Cederberg, Piketberg and Clanwilliam districts, Cape, South Africa)**martinfileri** sp. n.
- Epigynum externally with septum (Fig. 8a) longer than wide, anteriorly concave without lateral swellings, posteriorly raised and divided mesally; internally efferent sperm ducts (Fig. 8b) without flexible collar; spermathecae short, stout, inserted dorsally on small supporting bulb (Cape Town, Stellenbosch, Somerset West and Bredasdorp districts, western Cape, South Africa).....**castaneus** (Latreille)
- 10(7) Median lobe of septum transverse and not produced (Fig. 39) (Maseru district, Lesotho).....**crawshayi** Pocock
- Median lobe of septum produced posteriorly (similar to Fig. 52).....11
- 11(10) Spermathecae inserted lateral to supporting lobes and produced anteriorly (Fig. 72) (Nieuwoudtville, western Cape, South Africa).....**stuarti** sp. n.
- Spermathecae not as above.....12
- 12(11) Median lobe of septum more than 2 X longer than wide (Fig. 37); penultimate loops of efferent sperm duct strongly produced towards each other (Fig. 38) (possibly interior of eastern Cape, South Africa).....**lunatus** Pocock
- Median lobe of septum much less than 2 X longer than wide; penultimate loops of efferent sperm duct not produced as above13
- 13(12) Median lobe of septum (Fig. 63) longer than wide; spermathecae stout, inserted internally on supporting lobes and on plane horizontal to median line (Fig. 64), not hooked apically (Port Edward district (southern Natal), Transkei, Queenstown district and Amatola Mountains, eastern Cape, South Africa)**perornatus** Pocock
- Median lobe of septum wider than long to very much wider than long; spermathecae not as above14
- 14(13) Median lobe of septum (Fig. 57) not much wider than long, with obliquely sloping neck and shoulders anteriorly; spermathecae (Fig. 58) stout, straight, inserted externally on supporting lobes, produced anteriorly at angle of 45° or less to longitudinal median line (Grahamstown and Alicedale districts, eastern

- Cape, South Africa)**leppanae** Pocock
- Median lobe of septum (Fig. 46) much wider than long, with well-defined neck and horizontal shoulders anteriorly; spermathecae (Fig. 47) hooked apically, inserted internally on supporting lobes and produced laterally at an angle of 90° to longitudinal median line (Cradock, Graaff-Reinet and Beaufort West districts, Cape Province and Kokstad and Cedarville districts, south-western Natal, South Africa).....**karooensis** sp. n.
- 15(1) Sternum entirely black (western Cape, South Africa)16
- Sternum with one or more dark transverse bars on pale background18
- 16(15) Tibial apophysis (Fig. 9b) three-lobed; embolus straight; conductor elongate, straight (Cape Town, Stellenbosch, Somerset West and Bredasdorp districts, western Cape, South Africa).....**castaneus** (Latreille)
- Tibial apophysis entire; embolus recurved through 90° over bulb; conductor short, bowl-shaped.....17
- 17(16) Abdomen ventrally with a solid dark brown to black shield marking between epigastric groove and spinnerets; embolus (Fig. 29) columnar proximally, flaring distally and hooked apically; conductor sessile (Cederberg, Piketberg and Clanwilliam districts, western Cape, South Africa)**martinfilmeri** sp. n.
- Abdomen ventrally with broad transverse pale brown marking between black crescent marking posterior to epigastric groove and black patch anterior to spinnerets; embolus (Fig. 28) with a broad shallow channel proximally, obtuse apically; conductor distinctly stalked (Hottentots Holland Mountains, western Cape, South Africa).....**stilleri** sp. n.
- 18(15) Abdomen ventrally with dark brown spots or with a faint grey to black bell-shaped marking between crescent and spinnerets; femora I–II ventrally dark brown to black with broad yellow band apically; embolus relatively narrow, inserted proximally, reflexed distally, with vertical lamellar processes apically (as in Fig. 92) or entire (as in Fig. 80).....19
- Abdomen ventrally with clear white spots against a light yellow to rich orange-red background between crescent and spinnerets; femora I–II ventrally with white spots; embolus a horizontally flattened, broad, inclined blade inserted medially (as in Fig. 54)23
- 19(18) Embolus distally entire (Figs 79, 101), without vertical lamellate processes).....20
- Embolus distally with vertical lamellate processes (Figs 93, 100).....21
- 20(19) Sternum with transverse dark bar at coxae II (sometimes with additional, fainter, bars posterior to transverse bar); abdomen ventrally unmarked or with a faint grey to black bell-shaped mark between crescent and spinnerets; embolus (Fig. 80) apically aciculate and recurved through 270° (Africa south of Cunene and Limpopo rivers).....**superciliosus** L. Koch
- Sternum with 2–3 transverse dark bars (Figs 85–87), posterior bar strongly recurved; abdomen ventrally with large brown spots coalescing medially to form a large, irregular mark; embolus (Fig. 84) apically obtuse and recurved

- through less than 180° (eastern Zaïre, Rwanda, Uganda, Tanzania and northern Malawi).....**elliotti** Pocock
- 21(19) Sternum with transverse black bar at coxae II (and a widely interrupted second bar at coxae III) (Fig. 103), abdomen ventrally with wide black bar and followed by fine, intense black spots, embolus apically without distal carination but a broad, flat, wide lamellate flange (Fig 101) internally to apical embolus (Orange Free State and western Transvaal, South Africa)**leroyorum** sp. n.
- Sternum with 2 or more transverse dark bars, abdomen ventrally with large or small dark brown (not black) spots or blotches, embolus with a distal lamellar process apically.....22
- 22(21) Sternum with 2 chevron-like transverse dark bars; embolus (Fig. 100) with prominent lateral ridge crossing over to ventral face of blade distally and blunt-hooked apically, proximal process distal to upper ridge, neck angle wider than width of proximal process (Malawi and Zimbabwe)**johnstoni** Pocock
- Sternum (Fig. 95) with 2–3 transverse dark bars; embolus with distal ridge not crossing over to ventral face of blade, proximal process opposite to distal process, neck angle narrower than width of proximal process23
- 23(22) Distal process of embolus (Fig. 93) pronounced, short, flat; embolus column distinctly bulbous medially (Kenya and Tanzania)**hoehneli** Simon
- Distal process of embolus (Fig. 108) reduced, elongate and reflexed apically; embolus column slender medially, nearly straight (Warburton and Ermelo districts, south-eastern Transvaal, to Ndumu, northern Natal, South Africa)**ansiedippenaarae** sp. n.
- 24(18) Bulb with distinct hooked spine adjacent to base of embolus (Fig. 50).....25
- Bulb without spine.....27
- 25(24) Spine at base of embolus (Fig. 73) extremely long, more than half length of embolus (Nieuwoudtville, western Cape, South Africa)**stuarti** sp. n.
- Spine at base of embolus short, less than quarter length of embolus26
- 26(25) Tibial apophysis (Fig. 66) entire, slightly convex dorsally and with a ventral lobe; embolus (Fig. 65) flared distally, lateral margin slightly sinuate but flattened proximally; conductor recurved distally and laterally over embolus (Port Edward district, south-eastern Natal, Transkei, Queenstown district and Amatola Mountains, eastern Cape, South Africa)**perornatus** Pocock
- Tibial apophysis (Figs 51, 55, 56) bifurcate to trilobate; lateral margin of embolus (Fig. 49, 54) straight to strongly sinuate, shouldered proximally (Cradock, Graaff-Reinet and Beaufort West districts, Cape Province and Kokstad and Cedarville districts, south-western Natal, South Africa)**karoensis** sp. n.
- 27(24) Tibial apophysis (Fig. 44) short, flat, distinctly trilobate; bulb with an elongate, raised ridge (Fig. 42) adjacent to base of embolus; lateral margin of embolus (Fig. 41) flattened proximally and without a median channel (Maseru district, Lesotho).....**crawshayi** Pocock
- Tibial apophysis (Fig. 60) elongate, with a proximal lobe; bulb without a ridge as above; lateral margin of embolus ridged proximally and with deep, wide,

median channel (Figs 61–62) (Grahamstown and Alicedale districts, eastern Cape, South Africa) **leppanae** Pocock



Figs 16–21. Scanning electron micrographs of *Palystes castaneus* (Latreille, 1819). 16–20. Surface structures and setae of a female from Newlands, Cape Town. 16–18. Dorsal surface of tarsus II. 16. Organ near tarsal claw base (670 X). 17. Fluted trichobothrial base (1125 X). 18. Dorsal organ (10535 X). 19. Dentate and finely setulate setae on abdomen near epigynum (700 X). 20. Spinning field of right anterior spinneret, showing two ampullate and numerous piriform spigots (145 X). 21. Papillate sensory setae at apex of pedipalp tarsus of a male from Plumstead, Cape Town (595 X).

Palystes castaneus species group

Characterised by: Solid black sternum, epigyna with long, broad, flat, lightly to deeply excavated median septum ('ems', Figs 8a, 23, 32). Embolus supported by well-developed lateral tegular sclerite ('ls', Fig. 9a).

Included species: *P. castaneus* (Latreille, 1819), *P. martinfilmeri* sp. n., *P. stilleri* sp. n.

Distribution: South-western Cape Province, South Africa (Fig. 22).

Palystes castaneus (Latreille, 1819)

Figs 1–22

Thomisus castaneus Latreille, 1819: 30. Holotype: sex unspecified [adult ♀], 'Cap de Bonne-Esperance' [= Cape of Good Hope], de Lalande (MNHN) [examined].

Olios castaneus; Walckenaer 1837: 571.

O. [lios] castanea; Simon, 1864: 410.

Palystes castaneus; Simon, 1880: 262. [Designated as type species of *Palystes* L. Koch, 1875, through synonymy with *Palystes frenatus* L. Koch, 1875, by Simon 1897a: 63, 66].

Palistes [sic] *castaneus*; Petrunkevitch, 1928: 159.

Olios fuscus Walckenaer, 1837: 573. Holotype: sex [adult ♀] and provenance not stated ('elle est certainement étrangère a l'Europe') (MNHN) [examined]. [Synonymised by Simon 1880: 262–263].

Ocypete melanogaster C. Koch, 1845: 37, pl. CCCCIV, fig. 975. Holotype: adult ♂, 'Das Vorgebirg der guten Hoffnung' (location of type unknown). [Synonymised by Simon 1897a: 63].

Ocypete nobilis sensu C. Koch, 1845: 37, pl. CCCCIV, fig. 979 [misidentification, *nec Aranea nobilis* Fabricius, 1798]. [Synonymised by Simon 1880: 262].

Palystes frenatus L. Koch, 1875: 705, pl. LX, figs 4a–b. Syntypes: 3 ♀, 'Sudafrica' (lost, not in Tübingen). [Synonymised by Simon 1880: 262–263] Neotype: holotype ♀ of *Thomisus castaneus* Latreille, 'Cap de Bonne Esperance' (MNHN), here designated.

Palystes chaperi Simon, 1880: 263–265. Holotype: adult ♂, 'Cap', M. Chaper (MNHN 3.242) [examined]. **Syn. n.**

Remarks: Latreille's (1819) description of *Thomisus castaneus* was based on a specimen 35 mm long, sex unspecified, from the Cape of Good Hope, given to him by Gattoire. Simon (1880: 263) stated that he had seen Latreille's type ('Le type de Latreille...'), an adult female, with the label '*Philodromus castaneus* Latreille, M. Lalande, cap de Bonne Esperance' at MNHN. He noted that the specimen was badly faded and the epigynum was missing. Two adult females from the Cape, both identified as *Palystes castaneus* and both labelled 'type', are in MNHN, but only one has the label data cited by Simon (recognised here as the type specimen for *P. castaneus*). The unusual shape of the epigynum in this species, with the plate forming a deep, sunken basin, may well have led Simon to believe it was absent in the specimen he examined. The length given for the specimen in Latreille's description was 35 mm, a full centimetre longer than that of the specimen accepted here as the type. The discrepancy may due to typographical error.

Designation of the holotype specimen of *Thomisus castaneus* as the neotype for *Palystes frenatus* is necessary to firmly fix the identity of the latter as it is the name of the type species of the genus. No type material for *P. frenatus* is known to exist. L. Koch did not designate a type specimen for *P. frenatus*, but in the original description (1875: 705–706) referred to three specimens [at least one of which was an adult female as Pl. LX Fig. 4b depicts an epigynum] in the 'zoologischen Kabinet der Universität Tübingen'. None of the syntypes for *P. frenatus* can be found in Tübingen (Prof. H. M. Peters, *pers. comm.*), and they have not been located elsewhere. Koch's

illustration of an epigynum (Pl. LX, Fig. 4b), although stylised, is clearly that of *P. castaneus*. The neotype specimen here selected, like that of the specimen illustrated by Koch, is an adult female. The locality given by Koch ('Südafrika') is vague, but includes the type locality for *Thomisus castaneus* ('Cap de Bonne-Esperance').

C. Koch (1845) was the first to describe the male (as *Ocypete melanogaster*). Pocock (1896) synonymised *O. melanogaster* with *P. castaneus*, saying: 'The male [of *castaneus*], in fact, agrees so closely with the description of *Ocypete melanogaster* of C. Koch ... that I have not hesitated to regard the latter as the male of *castaneus*.' Koch's description includes a reference to the forked spur of the trilobate tibial apophysis of the pedipalp, a character unique to *P. castaneus*. The type of *Ocypete melanogaster* has not been found, but Pocock's synonymy is undoubtedly correct. Simon (1897a) listed this synonymy, but (p. 63, Fig. 58) incorrectly identified a drawing of a male palp of *P. superciliosus* as that of a male *P. castaneus*. The mistake was pointed out by Strand (1907b: 676).

Olios fuscus Walckenaer, 1837, was based on a badly preserved specimen, sex unspecified, of unknown provenance. Walckenaer separated it from *Thomisus castaneus* Latreille, chiefly on the basis of what he saw as strongly recurved eye rows in *O. fuscus*. The type specimen in MNHN is damaged and missing most of its legs (except for right leg IV and left femur I), but the epigynum is intact and is clearly that of *P. castaneus*. The damaged carapace gives the impression that the PER is recurved.

Ocypete nobilis was the name used by C. Koch (1845) for a female from the Cape. The specimen has not been found in any of the collections known to have C. Koch types. In his description he referred to *Aranea nobilis* Fabricius, 1798 [described from 'India']. The Fabricius name was listed by Zimsen (1964), but the specimen described by Fabricius was not found by Zimsen and is not in Copenhagen which contains much of the extant Fabrician collections. Simon (1880) regarded *Ocypete nobilis sensu* Koch as a possible misidentification of *P. castaneus*; Pocock (1896) concurred, adding that it was probably not *nobilis sensu* Fabricius because of its type locality. Koch's description (p. 37), closely matches that given by Latreille for *P. castaneus* and the illustration (Pl. CCCCXV, Fig. 979) is clearly that of a *Palystes* species.

Palystes chaperi was the name given by Simon (1880) to a male collected by Chaper at the Cape. There are two specimens determined by Simon as *P. chaperi* in MNHN. One, the identified male type cited by Simon, is an adult *P. castaneus*. *P. chaperi* is accordingly here recognised as a junior synonym. The other, a female, belongs in the new genus *Parapalystes*. Although Simon provides a detailed description of the male pedipalp (unmistakably that of *P. castaneus*), his description of the rest of the body is clearly based on the female. This is evident from his reference to markings (white spot anterior to fovea, spot markings of the coxae) and leg spination (a single dorsal tibial spine) present in the female, which are typical of *Parapalystes* but absent in the male type specimen. He also notes that the two white line markings at the outer edge of the chelicerae (characteristic of *Palystes*) are absent. The cheliceral markings are present in the male type, but absent in the female.

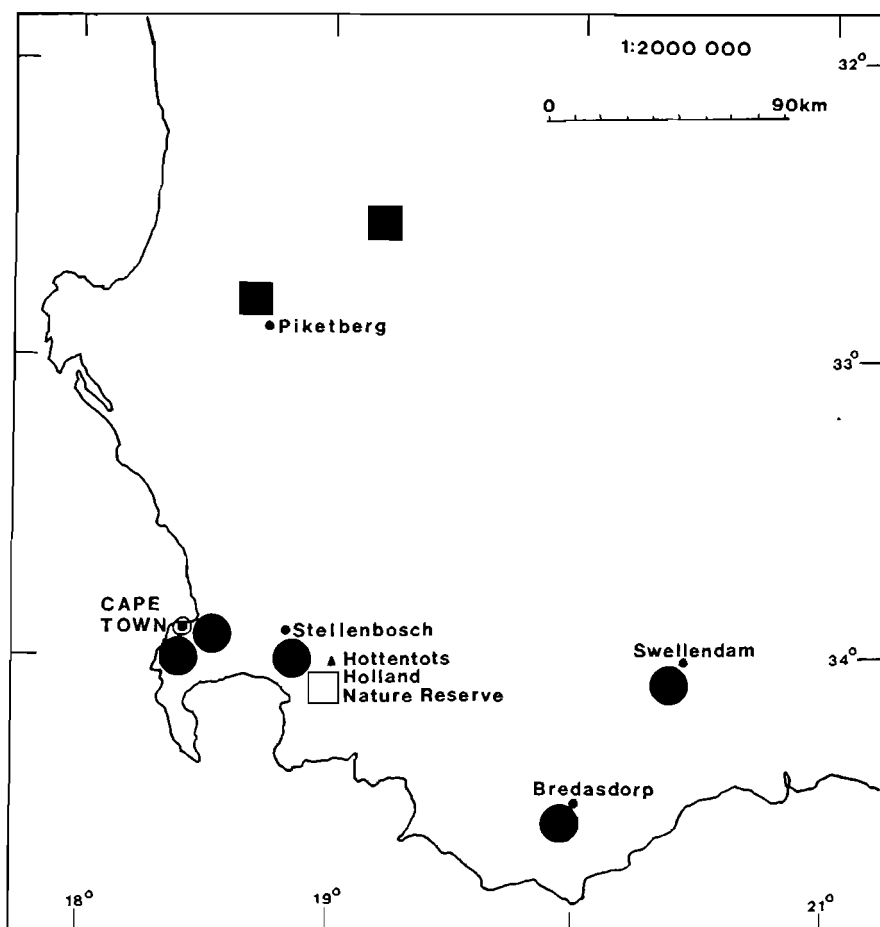


Fig. 22. Distribution of *Palystes castaneus* species group in southern and western Cape, South Africa.
 ● = *P. castaneus* (Latreille, 1819); ■ = *P. martinfilmeri* sp. n.; □ = *P. stilleri* sp. n.

Diagnosis: Both the trilobate tibial apophysis (Fig. 9b) of the adult male pedipalp and the large, basin-shaped epigynum (Fig. 8a) of the adult female readily separate this species from its congeners.

Distribution: South-western Cape Province, South Africa (Fig. 22): Cape Peninsula, Cape Town, Stellenbosch. Anomalous specimens from Brandfontein and Springfield in the Orange Free State, Delagoa Bay (Mozambique), and Harare and Bulawayo in Zimbabwe, were probably accidentally transported by man.

Redescription of holotype female:

The specimen is encrusted with white sediment, and a number of the legs are detached but it is otherwise in reasonable condition. There is a pinhole through the carapace, just left of the fovea, and the cuticle at the end of the abdomen is damaged.

Total length: 22.26 mm. The figured female (Figs 8a, 8b) is from Cape Town (SAMC B9129).

Colour and markings: Abdomen ventrally (Fig. 5) with black 'X'-shaped marking straddling epigynum anterior to epigastric groove, and with large, black bell-shaped marking opening from transverse black crescent posterior to epigynal groove and tapering posteriorly at spinnerets; sternum (Fig. 3) entirely black, densely covered with short, attenuate black setae against dark red-brown to black-pigmented cuticle; femora without ventral markings; coxae dark anterolaterally and on much of their ventral surface.

Carapace: CL 10.38, CW 8.13, HW 5.13; thoracic fovea approximately 0.28 wide, 2.50 long, occupying 0.24 X of CL and 0.31 X of CW. *Eyes:* Eye diameters: AME 0.42, ALE 0.65, PME 0.52, PLE 0.52; PER 3.25 wide, wider than AER by 1.27 X and occupying 0.63 X of HW and 0.40 X of CW; eye ratio AME:ALE:PME:PLE 1:1.56:1.26:1.26; distances separating eyes: AME-ALE 0.12, AME-AME 0.31, AME-PME 0.85, ALE-PLE 0.69, PME-PLE 0.54, PME-PME 0.54; MOQA 1.08, MOQP 1.54, MOQL 1.54; MOQ 1.00 X longer than wide, narrowed anteriorly, with MOQP 1.43 X wider than MOQA. Clypeus 0.55 high, 1.33 X diameter AME. *Chelicerae:* 3.75 long, 2.19 wide, 1.71 X longer than wide. *Sternum:* 4.69 long, SW1 3.44, 1.36 X longer than wide, SW2 2.50. *Labium:* 1.69 wide, 1.08 long, 1.57 X wider than long, occupying 0.68 X of SW2. *Maxillae:* 2.52 long, 1.63 wide, 1.55 X longer than wide.

Abdomen: 11.88 long, 8.13 wide.

Legs: Spination as in Fig. 7. Measurements:

	Palpus	I	II	III	IV
Femur	3.13	10.00	10.38	8.75	9.75
Patella	1.88	5.00	4.75	4.25	3.88
Tibia	2.25	9.13	8.75	6.50	7.75
Metatarsus	—	8.13	8.00	6.13	7.50
Tarsus	4.38	2.25	2.25	1.88	2.25
Total:	11.64	34.51	34.13	27.51	31.13

Epigynum: Externally (Fig. 8a) a large, strongly sclerotised dark red to black, sunken rectangular basin, with median septum ('ems') produced posteriorly to form 2 large lobes ('msl') divided by median incision at posterior margin; size of incision between lobes variable in specimens examined, ranging from short and narrow to deep and wide; median septum invaginated laterally ('li'). Internally (Fig. 8b) posterior lobes of septum ('goc') enfold exit of efferent sperm ducts ('eco') formed by invagination of septum; spermathecae ('sp') simple, short, closely attached to bulbous anterior invagination.

Description of male:

Total length: 17.9 mm. Based on an adult male (Figs 9a-b) from Hout Bay (34°02'S 18°21'E), 3.v.1984, J.Visser (NMSA).

Colour and markings: As in female.

Carapace: CL 9.7, CW 7.4, HW 3.9; thoracic fovea 0.1 wide and 3.2 long, occupying 0.33 X of CL and 0.43 X of CW. *Eyes:* Eye diameters: AME 0.45, ALE 0.78, PME 0.55, PLE 0.53; PER 3.1 wide and 1.19 X wider than AER, 0.8 X of HW

and 0.42 X of CW; eye ratio AME:ALE:PME:PLE 1:1.72:1.22:1.17; distances separating eyes: AME–ALE 0.08, AME–AME 0.28, AME–PME 0.80, ALE–PLE 0.58, PME–PLE 0.50, PME–PME 0.50; MOQA 1.18, MOQP 1.53, MOQL 1.70, MOQ 1.12 X longer than wide, narrowed anteriorly, with MOQP 1.30 X wider than MOQA. *Clypeus*: 0.50 high and 1.11 X diameter AME. *Sternum*: 4.20 long, SW1 3.25, 1.29 X longer than wide, SW2 2.75. *Labium*: 1.50 wide, 1.20 long, 1.25 X wider than long, occupying 0.55 X of SW2. *Maxillae*: 2.50 long, 1.40 wide, 1.79 X longer than wide.

Legs: Spination as in Fig. 7. Left leg I abnormally short (regrowth after autotomy). Measurements:

	Palpus	I (R)	II	III	IV
Femur	3.70	10.40	10.30	9.20	10.40
Patella	1.80	4.90	4.90	4.00	3.80
Tibia	1.80	9.40	9.00	7.20	8.10
Metatarsus	–	8.80	8.80	6.40	8.10
Tarsus	4.50	2.20	2.20	2.00	2.00
Total:	11.80	35.60	35.20	28.80	32.30

Pedipalp: Tibial apophysis (Fig. 9b, 'ta') large, single, situated distally on retrolateral surface, with 3 major prominences: dorsal, short finger-like projection directed dorsad; median, long, finger-like, sharp-tipped main prominence directed ventrad; ventral, swollen base crested by undulating ridge. Embolus (Figs 9a-b) long, straight ('em'), with short, small, sickle-shaped sclerite apically, inserted medially in radix region of tegulum ('te'), flanked anterolaterally by long embolar gulley and lateral sclerite ('ls') and retrolaterally by conductor ('co'); conductor membranous, long, crinkled, inserted retrolateral to embolus; tegulum ('te') large, heavily sclerotised, without other apophyses.

Additional material examined: SOUTH AFRICA: **Cape**: Bredasdorp, Elim, 1 ♀, 1900, R. Baur (SAMC C8447); Cape Town: museum grounds, 1 ♀, xii.1926, A. J. Hesse (SAMC B7148), Highlands Estate, 3318CD, 1 ♀, 10.ii.1981, Mrs Kregg (SAMC C249), 1 ♀, i.1966, P. L. G. Benoit (MRAC 130.327), University of Cape Town, 1 ♂ 1 ♀, 1964–1965 (NMSA), 1 ♀, 1896, F. Purcell (SAMC 643), 2 ♀ (SAMC C1893), Bergvliet: 1 subad. ♀ and wasp (wasp pulling paralysed spider over half-door), 18.ii.1986, 1 ♂, iii.1984, 1 ♂, iii.1986, E. Seekings (NMSA), Camp's Bay: 1 ♀, xii.1922, Prof. Thoday (SAMC B5867), 2 ♂ 1 ♀, 1896, A. Jeffery & B. Wallace (SAMC 3189), Claremont: 1 ♀, 12.ix.1963, B. Lamoral (NMSA), 1 ♀, 1938, Mrs Barnard (SAMC B9374), 1 ♂, in house, 7.iii.1981, Mr Servator (SAMC C254), Clifton, 2 ♂ 1 ♀, 3.v.1918, R. Wallace (SAMC B4180–B4181), Gardens, 1 ♂, 14.v.1991, N. Larsen, no. 165 (SAMC C2080), Kenilworth, 1 ♀, xi.1897, 1 ♀, 1898 (SAMC 2904 & 2910); Kirstenbosch, Table Mountain, Skeleton Gorge forest, 700–1000 ft, 1 ♂ 1 subad. ♀ 2 juv., under bark of dry logs, 26+29.x.1985, C. E. Griswold, J. Doyen & T. Meikle-Griswold (NMSA), Kirstenbosch, 33°58'S 18°28'E, 1 ♂, 21.ix.1970, B. Leon, No. 42 (NMSA 11818), Newlands, 1 ♀, viii.1983, B. Kaczmaruk (SAMC C1126), Newlands, 1 ♀, 21.ix.1970, B. Leon, No. 43 (NMSA), Plumstead, 1 ♂, 25.vi.1963, B. H. Lamoral (NMSA), Signal Hill, 1 ♀, v.1896, F. Purcell (SAMC 788), Table Mt, 3318CD, 1 ♂, ii.1982, J. Smuts (SAMC C1050), Table View, 1 ♀, 22.vi.1991, N. Larsen, no. 174 (SAMC C2279), Vredehoek, 1 ♂

(stung by *Afropompilus ignitus* which was then bitten by *Palystes*), i.1990, Mr Davis (SAMC C1729), Wynberg, 1♀, 1898, H. Beard (SAMC 3202), Wynberg, 1♀, ix.1896, 1♀, W. L. Sclater (SAMC 641–642); Cape Peninsula: 1♀, K. H. Barnard (SAMC B9129), 1♂, 1898, F. Purcell (SAMC 2916), Cape Flats, 1♀, 1884, J. de Soizer (SAMC 781), 1♂, German School (SAMC 9114), Hout Bay, 4♂4♀, in house, 14.ii.1984, 15.ii.1984, 3.v.1984, 27.vii.1984, 28.xii.1984, 6.ii.1985, 24.iv.1985, J. Visser 2925, 2983(x2), 3076, 3319, 3695, 3703, 3825 (NMSA), Hout Bay, 1♂, 7.xi.1983, 1♂, 16.ix.1983, 2♀, x.1983, 1♂, 1.xii.1983, J. V. [John Visser] 2737 (SAMC C1886, C1887, C1945, C1889), Hout Bay, Tierbos, 3.xii.1950 (AMGS), Hout Bay, 1♀ 1subad.♀, 9.ix.1967, E. S. Ross & A. R. Stephen (CASC), Kalk Bay, 1♀, xi.1896, H. Beard (SAMC 731), [Muizenberg], St James, 1♂, xii.1896, F. Purcell (SAMC 931), Newlands Forest, juv.♀, sitting on low vegetation, 11.iii.1992, N. Larsen, no. 331 (SAMC C2464), Newlands Forest, Paradijs, 1♀, 22.vii.1991, N. Larsen, no. 189 (SAMC C2278); Jonkershoek, 1♀, x.1926, R. H. Barnard (SAMC B7135); Mamre Mission Station [45km N. Cape Town], 1♀, 1896 (SAMC 896); Somerset West, 1♂, in garden, 18.iv.1984, J. Winstanley (PPRI '84/433); [Somerset West district], on Kogelberg [34°14'S 18°52'E], 3500 ft, viii.[19]41, T. P. Stokoe (SAMC); Stellenbosch, 2♀ (AMGS 2646); Stellenbosch, 1♀, x.1904, R. Broom (SAMC 14238); nr. Swellendam, 1♂, 1900, R. Baur (SAMC 7879); Cap d.g.H. [Cap der guten Hoffnung], 2♀, 8.iii.1858, Ida Pfeiffer (NHMV). **Orange Free State:** Brandfontein, 1♂, 11.xi.1984, A. V. Milewsky (SAMC C1890); Springfield, 1♀, x.1984, A. V. Milewsky (SAMC). **ZIMBABWE:** Salisbury [=Harare], 1♀, vii.1965 (NMSA); near Bulawayo, 1♀, 1896, Dr Kolbe (SAMC 3845). **MOZAMBIQUE:** Delagoa Bay, 1♀, [?Eugene Simon] (MNHN 9960).

***Palystes martinfilmeri* sp. n.**

Figs 22–27, 29, 31

Type material:

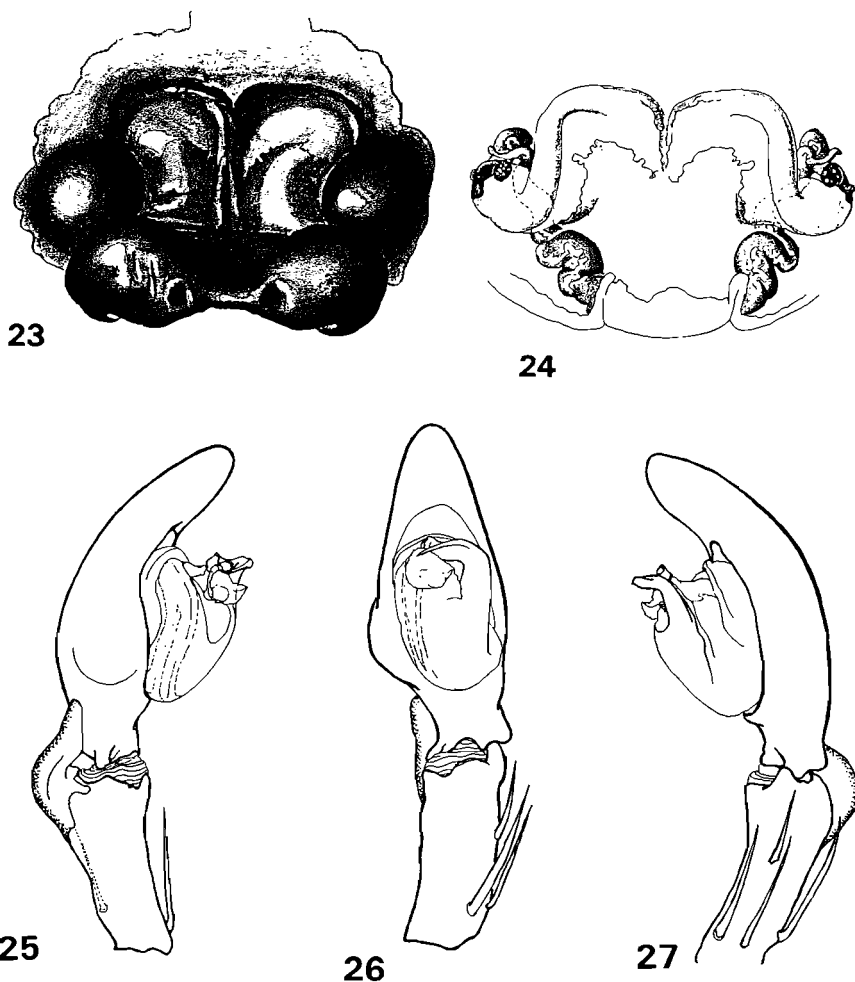
Holotype: adult ♂, SOUTH AFRICA: **Cape:** Cederberg Tourist Park, Kromrivier, 72 km SSE Clanwilliam, el. 3100ft. 17.xi. 1985, C. Griswold, J. Doyen & T. M.-Griswold (NMSA T496).

Paratypes: SOUTH AFRICA: **Cape Province:** Cederberg, Kromriver, 1♀, v.1935, W. Nieuwoudt (SAMC B8887); Clanwilliam, Elizabeth'sfontein, 2♂, 1898, Miss Bergh (SAMC 2908); Clanwilliam, Sneeuokop [Cederberg Mountains], 1♀, 1898, R. Patterson (SAMC 3634); Piquetberg [Piketberg], Gutverwacht, 3♀ 3♂, 1897, R. Marks (SAMC 2162).

Type locality: Kromrivier (32°32'S 19°17'E), 72 km SSE. of Clanwilliam, western Cape, South Africa.

Etymology: Named in honour of Dr Martin Filmer – for many years chairman of the Spider Club of South Africa – who has done much to promote amateur arachnology.

Diagnosis: Adult female differs from females of *P. castaneus* and *P. stilleri* in form of epigynal septum (Fig. 23), which is short, broad, excavated anteriorly, produced posteriorly in a transverse, laterally swollen, medially sunken bridge flanked by bulbous lateral sclerites. In *P. castaneus* (Fig. 8a) septum forms sunken basin ending



Figs 23–27. *Palystes martinfilmeri* sp. n. 23. External female epigynum. 24. Internal epigynum (paratype female SAMC B8887, Kromrivier). 25. Retrolateral aspect of male pedipalp. 26. Ventral aspect. 27. anterolateral aspect (holotype male NMSA T496, Kromrivier).

posteriorly in 2 diverging elongate lobes. In *P. stilleri* (Fig. 32) septum swollen medially. Adult male differs in form of embolus (Figs 25–27, 29, 31) with sturdy, round, unexcavated column, reflexed apically, dividing (Figs 29, 31) into ventral, laterally hooked sperm-duct spur, subtended by sessile basin-shaped membranous conductor (Fig. 31), with opposing dorsal, flattened, blunt-tipped ‘finger’ and in form of simple tibial apophysis directed distally. In *P. castaneus* embolar column (Fig. 9a) straight, not reflexed apically, with conductor elongate, running the length of embolus, and tibial apophysis trilobate; in *P. stilleri* embolar column excavated anterolaterally in form of wide valley (Fig. 28), without apical spur (Fig. 30), conductor distinctly stalked and apex of simple tibial apophysis reflexed ventrally.

Distribution: Piketberg, Clanwilliam and Cederberg districts of the western Cape, South Africa.

Description of holotype male:

Total length: 24.75 mm.

Colour and markings: Dorsally cryptically marked with darker and lighter mottling, overall colouring finely mottled shades of greyish lighter brown and darker brown; abdomen dorsally with longer pale setae rising above shorter setae that densely clothe the body, laterally with white fleck markings continuing ventrally on abdomen and ventral surface of femora; abdomen ventrally with large black to dark brown shield marking between epigastric groove and spinnerets, area anterior to epigastric groove dark brown and sparsely covered with short setae; sternum black; coxae unmarked ventrally but darker anterolaterally.

Carapace: Dorsally 12.50 long, 10.63 wide between leg bases II. Head region 5.50 wide across PER; thoracic fovea 3.38 long, occupying 0.27 X of CL and 0.32 X of CW. *Eyes:* Eye diameters: AME 0.57, ALE 0.85, PME 0.62, PLE 0.62, PER 3.75 wide, wider than AER by 1.15 X and occupying 0.68 X of HW and 0.35 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.49:1.08:1.08; distances separating eyes: AME-ALE 0.15, AME-AME 0.34, AME-PME 0.98, ALE-PLE 0.65, PME-PLE 0.69, PME-PME 0.54; MOQ dimensions: MOQA 1.38, MOQP 1.75, MOQL 1.54, MOQ 0.88 X longer than wide, narrowed anteriorly, with MOQP 1.27 X wider than MOQA; clypeus 0.52 high, 0.92 X diameter of AME. *Chelicerae:* 5.00 long, 2.56 wide, 1.95 X longer than wide. *Sternum:* 5.19 long, 4.06 wide between coxae II, 1.28 X longer than wide and 3.06 wide between coxae I. *Labium:* 1.85 wide, 1.69 long, 1.09 X wider than long, occupying 0.60 X of SW between coxae I. *Maxillae:* 3.14 long, 1.85 wide, 1.70 X longer than wide.

Abdomen: 12.25 long and 8.13 wide.

Pedipalp: Embolus rises on a robust, round column to recurve over bulb apically where it divides into a horizontally curved spine carrying sperm tube and an opposing vertically flattened blunt 'finger'. The spine is subtended by a dish-shaped white to diaphanous membranous conductor. The tibial apophysis is large, robust, blunt-tipped and reminiscent of the profile of a thumb cocking the hammer of a revolver.

Legs: Spines typical of genus with femora I-III(3:2:3), femora IV(3:2:2); patellae I-IV (1:1); tibiae I-IV with ventral, antero- and retrolateral spines as for genus, but with dorsal basal and apical spines present on legs I-IV. Measurements:

	Palpus	I	II	III	IV
Femur	5.13	16.25	17.13	14.38	16.88
Patella	1.88	6.13	6.38	5.00	5.00
Tibia	3.25	17.75	17.75	13.38	14.63
Metatarsus	—	16.88	17.13	12.25	16.25
Tarsus	5.00	3.75	3.38	3.13	3.50
Total:	15.26	60.76	61.77	48.14	56.26

Description of female (SAMC B8887):

Total length: 35.26 mm.

Colour and markings: Abdomen dorsally with pulmonary marking outlined in darker brown, laterally with some darker spotting, ventrally with large, dark, rich

brown bell-shaped marking between epigastric groove and spinnerets. Sternum dark to black. Coxae dark anteriorly and basally but not ventrally. Carapace dorsally with paler median line, edged with dark brown, from PME to thoracic fovea. Femora light yellow-brown ventrally, tibiae I–IV with 2 dark and 2 pale bands alternating ventrally.

Carapace: Dorsally 15.88 long, 12.50 wide between leg bases II. Head region 8.00 wide across PER; thoracic fovea 4.75 long, occupying 0.30 X of CL and 0.38 X of CW. **Eyes:** Eye diameters: AME 0.63, ALE 1.00, PME 0.77, PLE 0.77, PER 5.00 wide, wider than AER by 1.25 X and occupying 0.63 X of HW and 0.40 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.63:1.22:1.22; distances separating eyes: AME–ALE 0.12, AME–AME 0.38, AME–PME 1.00, ALE–PLE 0.83, PME–PLE 0.82, PME–PME 0.77; MOQ dimensions: MOQA 1.66, MOQP 2.34, MOQL 2.25, MOQ 0.96 X longer than wide, narrowed anteriorly, with MOQP 1.41 X wider than MOQA. Clypeus height 0.82, 1.29 X diameter of AME. **Chelicerae:** 6.31 long, 3.69 wide, 1.71 X longer than wide. **Sternum:** 6.56 long, 5.00 wide between coxae II, 1.31 X longer than wide and 3.75 wide between coxae I. **Labium:** 2.55 wide, 2.18 long, 1.17 X wider than long, occupying 0.68 X of SW between coxae I. **Maxillae:** 3.85 long, 2.65 wide, 1.45 X longer than wide.

Abdomen: 19.38 long and 14.38 wide.

Epigynum: Externally (Fig. 23), median septum excavated, wide, ending posteriorly in a transverse, laterally bulbous, bridge, flanked anterolaterally by bulbous lateral epigynal sclerites. Internally (Fig. 24), spermathecae widely separated, lateral to septum, just visible laterally at foot of anterior support collar formed by anterior invagination of septum.

Legs: Spine pattern typical of genus, but femora I–III(3:2:3), femur IV(3:2:2); patellae(1:0:1); tibiae I–IV with usual spination and basal and apical spines dorsally. **Measurements:**

	Palpus	I	II	III	IV
Femur	5.63	17.75	18.00	15.00	16.50
Patella	2.50	7.38	7.50	5.75	5.75
Tibia	3.50	16.50	16.50	12.88	14.38
Metatarsus	–	15.88	16.25	11.63	15.00
Tarsus	6.25	3.38	3.38	2.75	3.13
Total:	17.88	60.89	61.63	48.01	54.76

Additional material examined: None.

Palystes stilleri sp. n.

Figs 28, 30, 32–36

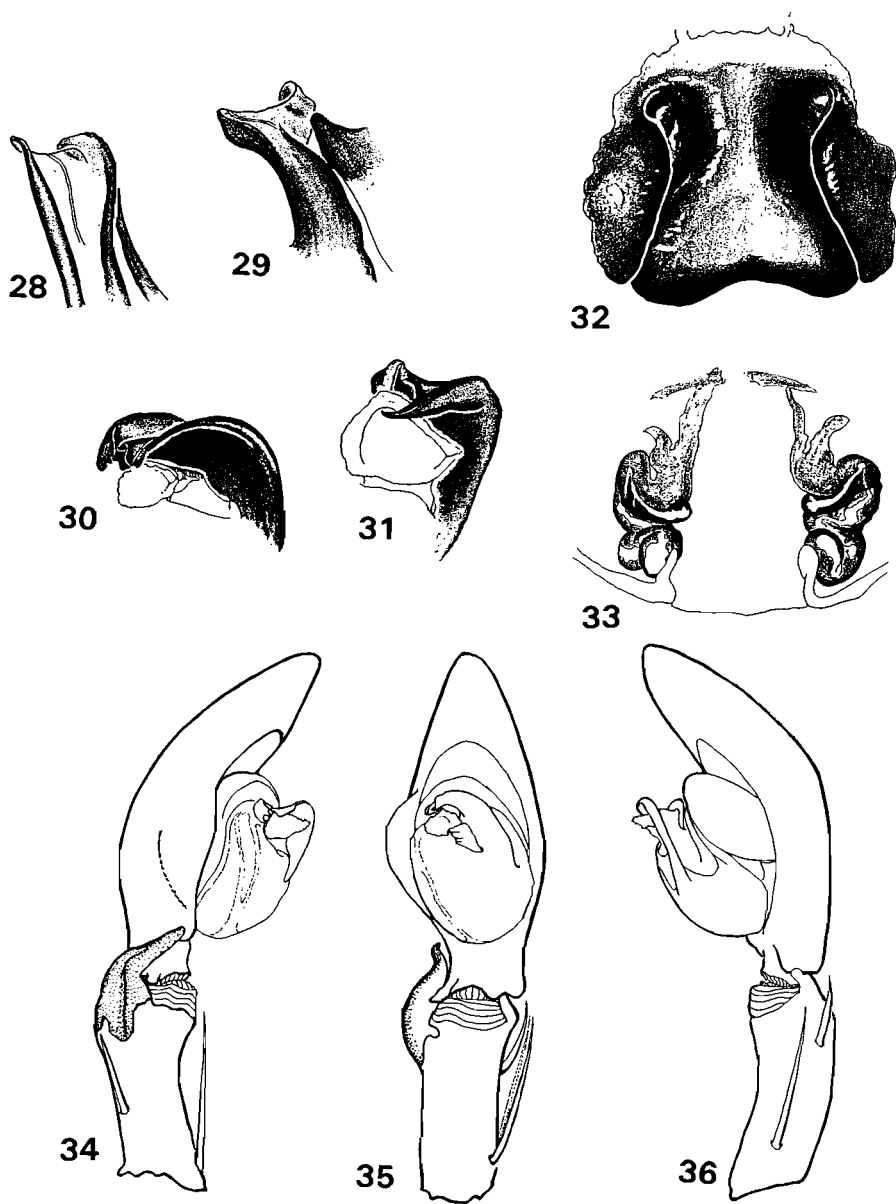
Type material:

Holotype: adult ♂, SOUTH AFRICA: **Cape:** Hottentots Holland Mts. 3500', i.1916, K. Barnard (SAMC B2019).

Paratype: adult ♀, SOUTH AFRICA: **Cape:** Jonkershoek, Stellenbosch, in rotting log, 17.v.1975, M. Stiller (PPRI '80/193).

Type locality: Hottentots Holland Mountains, south-western Cape, South Africa.

Etymology: Named after a keen *Palystes* collector, Martin Stiller, who found the paratype of this species and also the holotype and paratypes of *P. ansiedippenaarae* sp. n.



Figs 28–36. *Palystes* species. 28–31. Comparison of apical structure of embolus in *P. martinfilmeri* sp. n. and *P. stilleri* sp. n. 28–29. Anterolateral aspect, 28. *P. stilleri*. 29. *P. martinfilmeri*. 30–31. Retrolateral aspect. 30. *P. stilleri*. 31. *P. martinfilmeri*. 32–36. *P. stilleri*. 32. External female epigynum. 33. Internal epigynum (paratype female, PPRI AcAT '80/193, Jonkershoek, Stellenbosch). 34. Retrolateral aspect, male pedipalp. 35. Ventral aspect. 36. Anterolateral aspect (holotype male, SAMC B2019, Hottentots Holland Mts.).

Diagnosis: Epigynum (Fig. 32) with anteriorly narrowed, bowed (not medially excavated) septum, widened and flattened posteriorly, not unlike a broad, flat nose.

Embolus excavated anterolaterally in a wide, shallow trough (Fig. 28), reflexed apically, ending in broad, flattened, blunt-ended blade (Fig. 30) with sperm tube and opposed by flattened opposing 'finger'; apex subtended by stalked basin-shaped membranous conductor (Fig. 30). In *P. castaneus* the embolar column is straight, not reflexed apically, and the conductor is elongate, running the length of the embolus (Fig. 9b). In *P. martinfilmeri* the embolar column is not excavated anterolaterally (Fig. 29), the vertically flattened finger-like projection opposes a large spur apically and the conductor is sessile (Fig. 31). The ventral markings of the abdomen (a broad fawn-brown to yellow patch transversely interrupting the median dark shield marking) also clearly distinguish *P. stilleri* from the other two species which have solid black to dark brown shield markings.

Distribution: Hottentots Holland Mountains, immediately southeast of Stellenbosch, in the south-western Cape Province of South Africa.

Description of holotype male:

Total length: 26.25 mm.

Colour and markings: Generally pale brown. Abdomen dorsally with a number of very long pale setae rising above shorter setae that densely clothe the body; laterally with a few white fleck markings posterior to epigastric groove; ventrally with broad transverse pale brown marking, edged with darker brown, immediately posterior to dark brown crescent posterior to epigastric groove, followed by small dark brown marking anterior to spinnerets; area anterior to epigastric groove dark brown and sparsely covered with short setae. Sternum black. Legs: coxae unmarked ventrally but darker anterolaterally; femora ventrally with some white fleck markings.

Carapace: Dorsally 13.00 long, 9.88 wide between leg bases II. Head region 5.50 wide across PER; thoracic fovea 3.88 long, occupying 0.30 X of CL and 0.39 X of CW. *Eyes:* Eye diameters: AME 0.52, ALE 0.83, PME 0.54, PLE 0.54, PER 3.56 wide, wider than AER by 1.27 X and occupying 0.65 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.59:1.03:1.03; distances separating eyes: AME-ALE 0.11, AME-AME 0.34, AME-PME 0.92, ALE-PLE 0.74, PME-PLE 0.62, PME-PME 0.54; MOQ dimensions: MOQA 1.23, MOQP 1.69, MOQL 1.54, MOQ 0.91 X longer than wide; narrowed anteriorly, with MOQP 1.38 X wider than MOQA; clypeus 0.42 high, 0.79 X diameter of AME. *Chelicerae:* 4.88 long, 2.50 wide, 1.95 X longer than wide. *Sternum:* 5.31 long, 4.06 wide between coxae II, 1.31 X longer than wide and 2.81 wide between coxae I. *Labium:* 2.00 wide, 1.54 long, 1.30 X wider than long, occupying 0.71 X of SW between coxae I. *Maxillae:* 3.14 long, 2.00 wide, 1.57 X longer than wide.

Abdomen: 13.25 long and 8.50 wide.

Pedipalp (Figs 28, 30, 34–36): Embolus column excavated anterolaterally in a wide, shallow trough and reflexed apically, ending in a broad, flattened, blunt-ended blade containing sperm tubule, opposed by vertically flattened 'finger' (Fig. 30); apex subtended by distinctly stalked, basin-shaped membranous conductor. Tibial apophysis (Figs 34, 35) large, robust, blunt-tipped but more slender than that of *P. martinfilmeri* and reflexed ventrally across base of paracymbium.

Legs: Tarsi of left legs I and II missing. Spines typical of genus with femora

I–III(3:2:3), femora IV(3:2:2); patellae I–IV(1:1); tibiae I–IV with ventral, antero- and retrolateral spines as for genus, but with dorsal basal and apical spines present on legs I–IV. Measurements:

	Palpus	I	II	III	IV
Femur	5.13	16.13	16.00	14.13	16.13
Patella	2.00	6.50	6.75	5.63	5.25
Tibia	3.13	15.88	15.25	11.88	13.25
Metatarsus	–	15.75	15.00	11.25	14.00
Tarsus	6.00	3.13	3.38	2.50	2.88
Total:	16.26	57.39	56.38	45.39	51.51

Description of female (PPRI '80/193):

Total length: 25.26 mm.

Colour and markings: Same as holotype male described above.

Carapace: Dorsally 12.13 long, 9.75 wide between leg bases II. Head region 5.63 wide across PER; thoracic fovea 3.00 long, occupying 0.25 X of CL and 0.31 X of CW. *Eyes:* Eye diameters: AME 0.49, ALE 0.74, PME 0.54, PLE 0.54, PER 3.63 wide, wider than AER by 1.18 X and occupying 0.64 X of HW and 0.37 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.50:1.09:1.09; distances separating eyes: AME–ALE 0.15, AME–AME 0.34, AME–PME 0.77, ALE–PLE 0.62, PME–PLE 0.54, PME–PME 0.54; MOQ dimensions: MOQA 1.29, MOQP 1.69, MOQL 1.72, MOQ 1.02 X longer than wide, narrowed anteriorly, with MOQP 1.31 X wider than MOQA. Clypeus 0.54 high, 1.09 X diameter of AME. *Chelicerae:* 4.38 long, 2.44 wide, 1.79 X longer than wide. *Sternum:* 5.00 long, 3.88 wide between coxae II, 1.29 X longer than wide and 2.94 wide between coxae I. *Labium:* 2.00 wide, 1.26 long, 1.59 X wider than long, occupying 0.68 X of SW between coxae I. *Maxillae:* 2.92 long, 2.15 wide, 1.36 X longer than wide.

Abdomen: 13.13 long and 11.88 wide.

Epigynum (Figs 32, 33): Epigynum externally with an anteriorly narrowed, bowed, not medially excavated, septum, widening and flattening posteriorly, not unlike a broad, flat nose flanked laterally by swellings. Internally, spermathecae lie immediately posterior to foot of support collar and project inwards (Fig. 33).

Legs: Spine pattern as for genus. Measurements:

	Palpus	I	II	III	IV
Femur	4.38	13.13	13.38	11.38	12.75
Patella	2.25	5.88	6.13	4.88	4.75
Tibia	3.13	12.50	12.50	9.00	10.75
Metatarsus	–	12.50	12.13	8.38	10.63
Tarsus	4.75	3.00	2.63	2.13	2.63
Total:	14.51	47.01	46.77	35.77	41.51

Additional material examined: None.

Palystes lunatus species group

Characterised by: Abdomen ventrally with large transverse dark brown to black crescent-shaped marking immediately posterior to epigastric groove, followed by distinct round white spots against a tawny yellow to rich reddish-orange background, spotting continuing ventrally on femora; well-developed 'tongue'-shaped median lobe of epigynal septum strongly produced ventrally, projecting posteriorly; broad,

reflexed embolus of male pedipalpal bulb with vestigial to prominent hooked basal spur (vestigial tegular sclerite). Sternum with either a single transverse band level with anterior faces of coxae II, or first band followed by a second band level with anterior faces of coxae III. Second band may be medially interrupted or may join up with first band medially (varies within species).

Included species: *Palystes lunatus* Pocock, 1896; *P. crawshayi* Pocock, 1902; *P. leppanae* Pocock, 1902; *P. perornatus* Pocock, 1900; *P. karooensis* sp. n.; *P. stuarti* sp. n.

Distribution: Western and eastern Cape, Transkei, Lesotho and southern Natal (Fig. 76)

Palystes lunatus Pocock, 1896

Figs 37–38, 76

Palystes lunatus Pocock, 1896: 60, Pl. VIII, Fig. 5. Holotype: adult ♀, 'S. Africa', (Dr Quain) (BMNH 'no reg. no.') [examined].

Remarks: Pocock's description was based on an adult female donated by Dr Quain. An adult female in BMNH (label data given above) is undoubtedly the holotype of *P. lunatus*; label data, markings and form of the ventral epigynum agree with Pocock's description (p. 60) and illustration (Pl. VIII, Fig. 5). It has not been possible to restrict the type locality further than the vague 'S. Africa' given by Pocock. The specimen was not recorded in the register when donated to BMNH and I have not been able to find out anything about Dr Quain or where he was likely to have collected the specimen. To add to the problem, I have found no other conspecific females. I do not think the form of the epigynum is aberrant, as there are differences in its basic structure compared with its relatives in the species group. Apart from the considerable length and narrowness of the median lobe of septum ventrally (more than twice longer than wide), the epigynum internally has a greatly produced efferent sperm duct which folds back on itself, extending medially well beyond the base of the spermathecae.

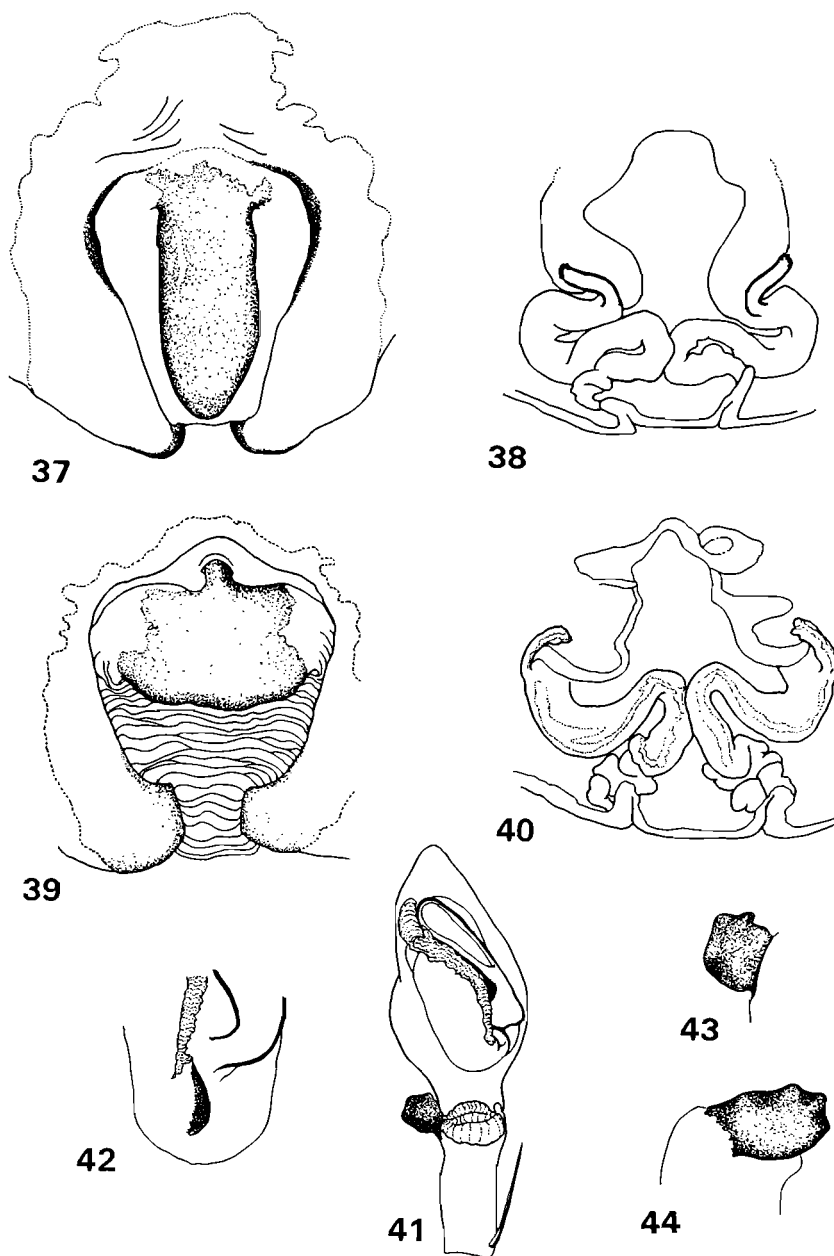
Diagnosis: The form of the epigynum with its posteriorly produced median septum, and the ventral abdominal markings with distinct, large white cream blotches posterior to the postepigynal dark brown transverse bar, place the species in the *lunatus* species group. The greatly produced median septum (Fig. 37), more than twice as long as wide, and the form of the internal efferent sperm duct (Fig. 38), separate it from other species in the group.

Distribution: Known only from the type specimen and its labelled locality 'South Africa'. Like several other species in this group, *P. lunatus* may be restricted to a relatively small locality, probably somewhere in the montane interior of the eastern Cape Province of South Africa.

Redescription of holotype female:

Total length: 28.50 mm.

Colour and markings: Abdomen dorsally with pulmonary marking, laterally darker on top, ventrally with dark brown transverse bar immediately posterior to epigastric groove and with large white to cream rough spots to blotches against a light to rich



Figs 37–44. *Palystes lunatus* Pocock, 1896 and *P. crawshayi*, Pocock, 1902. 37–38. *P. lunatus*. 37. External female epigynum. 38. Internal epigynum (female holotype, BMNH). 39–44. *P. crawshayi*. 39. External female epigynum. 40. Internal epigynum (neotype female SAMC 14429, Lesotho). 41. Ventral aspect, male pedipalp. 42. Detail of ridge-like reduced tegular sclerite at base of embolus. 43. Ventral aspect, tibial apophysis. 44. Retrolateral aspect, tibial apophysis (described male, SAMC 14429).

red-brown field. Sternum with 2 dark transverse bars in line with leg bases II and III, anterolateral faces of coxae dark, femora ventrally dark with pale patches. Tibiae ventrally dark with a median and an apical broad pale bar.

Carapace: Dorsally 12.50 long, 9.63 wide between leg bases II. Head region 5.63 wide across PER; thoracic fovea 4.13 long, occupying 0.33 X of CL and 0.43 X of CW. *Eyes*: Eye diameters: AME 0.57, ALE 0.80, PME 0.58, PLE 0.58, PER 3.88 wide, wider than AER by 1.11 X and occupying 0.69 X of HW and 0.40 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.41:1.03:1.03; distances separating eyes: AME-ALE 0.18, AME-AME 0.38, AME-PME 0.83, ALE-PLE 0.77, PME-PLE 0.71, PME-PME 0.62; MOQ dimensions: MOQA 1.38, MOQP 1.78, MOQL 1.63, MOQ 0.91 X longer than wide, narrowed anteriorly, with MOQP 1.29 X wider than MOQA. *Chelicerae*: 4.50 long, 2.50 wide, 1.80 X longer than wide. *Sternum*: 5.44 long, 3.81 wide between coxae II, 1.43 X longer than wide and 2.81 wide between coxae I. *Labium*: 2.18 wide, 1.54 long, 1.42 X wider than long, occupying 0.78 X of SW between coxae I. *Maxillae*: 3.35 long, 2.12 wide, 1.58 X longer than wide.

Abdomen: 16.00 long and 11.25 wide.

Epigynum: Median septum of epigynum greatly produced posteriorly, more than twice as long as wide. Interior epigynum with spermathecae dorsal to support collar and reflexed outwards. The greatly produced efferent sperm duct folds back on itself, extending medially well beyond base of spermathecae.

Legs: Spine pattern and markings as for genus. Measurements:

	Palpus	I	II	III	IV
Femur	4.25	13.25	13.50	12.13	13.13
Patella	2.38	6.25	6.25	5.00	5.13
Tibia	2.88	12.25	12.50	9.75	10.63
Metatarsus	—	12.38	12.25	8.75	11.13
Tarsus	5.13	2.63	2.75	2.50	2.75
Total:	14.64	46.76	47.25	38.13	42.77

Additional material examined: None.

Palystes crawshayi Pocock, 1902

Figs 39–44, 76

Palystes crawshayi Pocock, 1902: 27. Syntypes: 2, at least one an adult female: 'Maseru' [Lesotho] (lost, not in BMNH). Adult ♀ neotype here designated: Lesotho, 1905, W. C. Wroughton (SAMC 14429).

Remarks: The two syntypes collected by Mr Crawshay have not been located but a number of conspecific adult female and male specimens from Maseru, Lesotho, are in the collections of the SAMC (donated in 1905 by W. C. Wroughton) and BMNH (donated in 1907 and 1912 by Mrs L. Wroughton and Dr Maclean). The females all have the characteristic transverse septum described by Pocock. At present this is the only known locality for this species, and these specimens remain the only known collected material. As no syntype material appears to be extant, one of the females in SAMC collection has been designated as a neotype and is described below.

Diagnosis: The transverse, shallow 'tongue' of the median lobe of the epigynal septum (up to 6 X wider than long) (Fig. 39) is characteristic of females of this species, as are the anteriorly produced spermathecae inserted laterally to the internal support lobes

(Fig. 40). The short, flat, trilobate tibial apophysis (Figs 43, 44), the ridge (in place of a spur) at the base of the embolus (Fig. 42), and the absence of a median channel on the embolus, clearly distinguish the male from other species in the group.

Distribution: Known only from Lesotho.

Description of female neotype:

Total length: 26.50 mm.

Colour and markings: Specimen faded to a light brownish yellow (probably from exposure to light), although remains of characteristic markings of species group are evident (2 black bars across sternum, dark post-epigynal transverse bar and white spotting of abdomen ventrally). Pocock's (1902: 27) description of his relatively fresh specimens is characteristic for the *lunatus* species group as a whole, and is repeated here as a guide: 'Colour of dorsal surface a fairly uniform greyish brown, obscurely mottled like the back of tarsi; pale clypeal band on base and two superior external pale bands on mandible; sternum yellow, with two black bands; coxae yellow; femora greyish black below, conspicuously spotted with yellowish grey; epigastric area yellow; a transverse black band behind the epigastric fold, the rest of the lower surface dark red variegated with white spots.'

Carapace: Dorsally 10.25 long, 9.38 wide between leg bases II. Head region 5.19 wide across PER; thoracic fovea 3.63 long, occupying 0.35 X of CL and 0.39 X of CW. *Eyes:* Eye diameters: AME 0.46, ALE 0.69, PME 0.46, PLE 0.46, PER 3.38 wide, wider than AER by 1.20 X and occupying 0.65 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.50:1.00:1.00; distances separating eyes: AME-ALE 0.11, AME-AME 0.35, AME-PME 0.77, ALE-PLE 0.74, PME-PLE 0.62, PME-PME 0.46; MOQ dimensions; MOQA 1.23, MOQP 1.51, MOQL 1.07, MOQ 0.94 X longer than wide, narrowed anteriorly, with MOQP 1.23 X wider than MOQA. Clypeus 0.38 high, 0.83 X diameter of AME. *Chelicerae:* 4.06 long, 2.38 wide, 1.71 X longer than wide. *Sternum:* 4.38 long, 3.63 wide between coxae II, 1.21 X longer than wide and 2.63 wide between coxae I. *Labium:* 1.85 wide, 1.17 long, 1.58 X wider than long, occupying 0.70 X of SW between coxae I. *Maxillae:* 2.46 long, 1.48 wide, 1.67 X longer than wide.

Abdomen: 16.25 long and 11.25 wide.

Epigynum: Externally, median septum lobe transverse, not produced (Fig. 39). Internally, spermathecae produced anteriorly and inserted laterally to supporting lobes (Fig. 40).

Legs: Spine pattern typical of genus, but with left femur III missing a retrolateral spine and with femora IV (left and right) both 3:2:1 with only a single retrolateral spine instead of the more usual two retrolateral spines. Tibial dorsal spines also varied with left I and II and right I with both distal and proximal spines, rest of tibiae all with only a single, distal, spine. Measurements:

	Palpus	I	II	III	IV
Femur	3.50	11.75	11.88	10.13	11.38
Patella	1.88	5.00	5.00	4.13	4.00
Tibia	2.50	10.63	11.00	8.75	9.50
Metatarsus	—	10.63	10.50	7.50	9.38
Tarsus	4.38	2.88	2.75	2.13	2.50
Total:	12.26	40.89	41.13	32.64	36.76

Description of male:

Total length: 17.76 mm.

The description is based on an adult male in SAMC, taken from the same jar as the neotype female, and labelled: LESOTHO, 1905, W. C. Wroughton (SAMC 14429).

Colour and markings: Faded, and abdominal cuticle split away (as in a teneral specimen). Otherwise as in female.

Carapace: Dorsally 9.38 long, 7.50 wide between leg bases II. Head region 4.00 wide across PER; thoracic fovea 2.38 long, occupying 0.25 X of CL and 0.32 X of CW. *Eyes:* Eye diameters: AME 0.37, ALE 0.62, PME 0.38, PLE 0.38, PER 2.69 wide, wider than AER by 1.16 X and occupying 0.67 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.67:1.04:1.04; distances separating eyes: AME-ALE 0.12, AME-AME 0.35, AME-PME 0.69, ALE-PLE 0.49, PME-PLE 0.46, PME-PME 0.46; MOQ dimensions: MOQA 1.08, MOQP 1.38, MOQL 1.38, MOQ 1.00 X longer than wide; narrowed anteriorly, with MOQP 1.29 X wider than MOQA; clypeus 0.38 high, 1.04 X diameter of AME. *Chelicerae:* 3.38 long, 1.88 wide, 1.80 X longer than wide. *Sternum:* 4.06 long, 3.00 wide between coxae II, 1.35 X longer than wide and 2.50 wide between coxae I. *Labium:* 1.54 wide, 1.23 long, 1.25 X wider than long, occupying 0.62 X of SW between coxae I. *Maxillae:* 2.06 long, 1.32 wide, 1.56 X longer than wide.

Abdomen: 8.38 long and 4.88 wide.

Pedipalp (Figs 41–44): Spur at base of embolus reduced to a long blade-like ridge (Fig. 42). Tibial apophysis short, flattened, rectangular and three-lobed (Figs 41, 43–44). Embolus flattened, without median channel.

Legs: Spines typical of genus but femora IV(3:2:1) missing a retrolateral spine on both legs; all tibiae dorsally with both proximal and distal spines present. Measurements:

	Palpus	I	II	III	IV
Femur	2.75	11.63	11.75	10.00	11.50
Patella	1.75	4.50	4.63	3.75	3.75
Tibia	2.25	11.38	11.38	8.75	9.63
Metatarsus	—	11.88	11.63	8.13	9.75
Tarsus	4.25	3.00	2.88	2.25	2.50
Total:	11.00	42.39	42.27	32.88	37.13

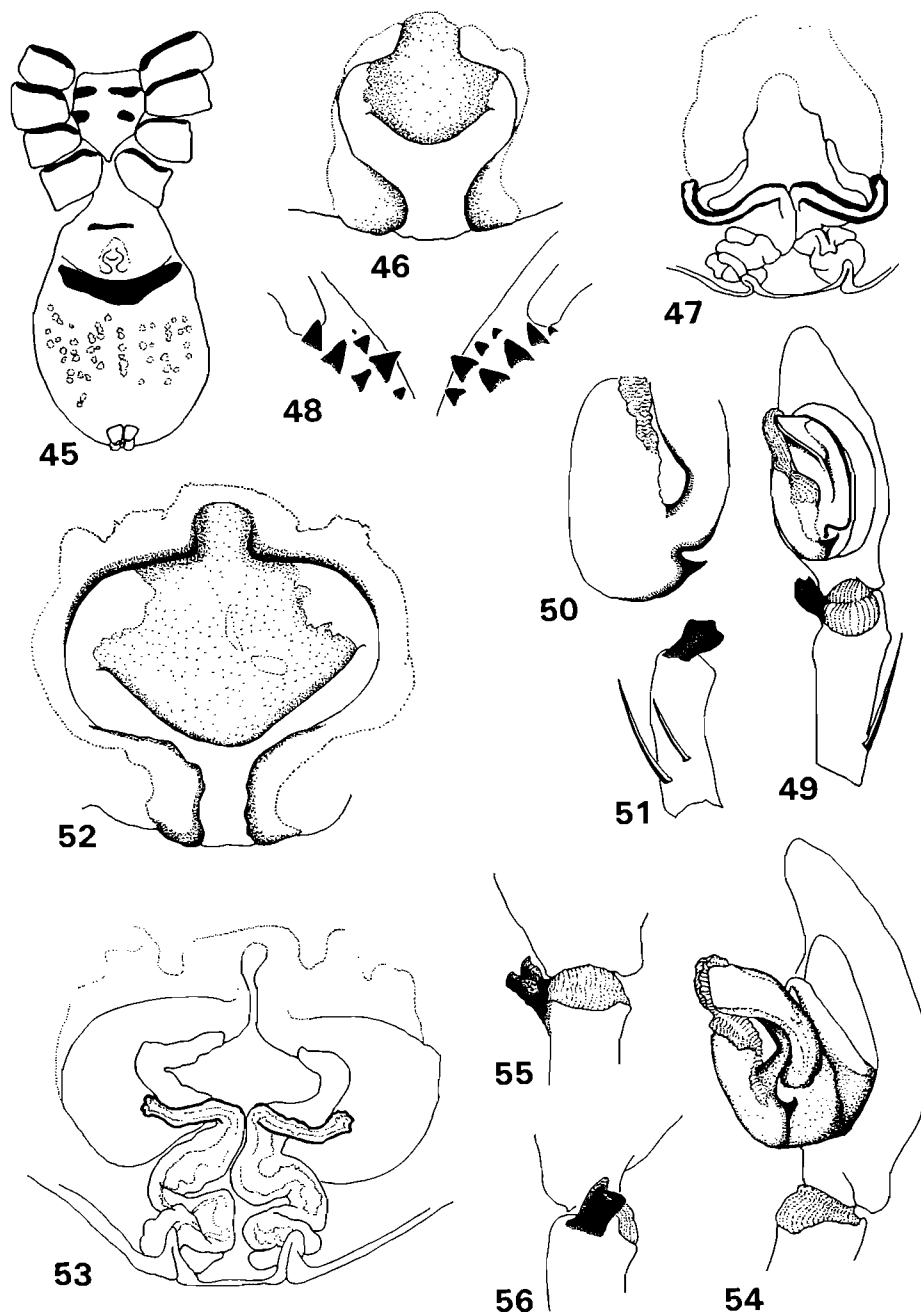
Additional material examined: LESOTHO: [Maseru], 2 ♀, 1905, W. C. Wroughton (SAMC 14429); Maseru, 3 ♀ 4 ♂ 2 subad. ♂ 1 juv., 1907, Dr Maclean & L. Wroughton (BMNH 07.10.8.4-15 part); Maseru, 4 ♀ 2 subad. ♀, 1912, Mrs L. Wroughton (BMNH 1912.7.27.4-8).

Palystes leppanae Pocock, 1902

Figs 57–62, 76

Palystes leppanae Pocock, 1902: 23, Pl. III, Fig. 9. Holotype: adult ♀, 'Tea Fountain, near Grahamstown', [1901], Miss Leppan (BMNH 1901.3.13-258) [examined].

Remarks: An adult female in BMNH (labelled as above), which matches Pocock's description and illustration is undoubtedly the female described by Pocock. The specimen is well preserved with the legs intact; it has a small white steel pin 14 mm long inserted transversely through the epigastric groove (possibly inserted by Pocock to lift the epigynal plate for drawing).



Figs 45–56. *Palystes karoensis* sp. n. 45–51. Holotype female (NMSA T501) and paratype male (NMSA T502) from Stolshoek (near Beaufort West). 45. Ventral aspect, female, showing markings of abdomen, sternum and coxae. 46. External female epigynum. 47. Internal epigynum. 48. Cheliceral dentition, male paratype, showing additional apical teeth on antero- and retrolateral margins of left chelicera and antero-margin of right chelicera. 49. Ventral aspect, male pedipalp. 50. Detail of thorn-like vestigial tegular sclerite at base of embolus. 51. Retrolateral aspect, tibial apophysis. 52–56. Female from Cedarville (near Mvenyane) (AMGS 2344) and male from Ntolas (AMGS 2110), south-western KwaZulu-Natal. 52. External female epigynum. 53. Internal epigynum. 54. Anterolateral aspect, left pedipalp. 55. Ventral aspect, male tibial apophysis. 56. Retrolateral aspect, tibial apophysis.

Diagnosis: The females of *P. leppanae* and *P. karoensis* have a characteristic heart-shaped, round-shouldered epigynum (Figs 46, 57) with a posteriorly produced median lobe which varies from slightly longer than wide to slightly wider than long. However, the two species are clearly distinguished by the structure and position of the spermathecae internally. In *P. leppanae* the spermathecae (Fig. 58) are straight, short and stout and project anterolaterally away from a common median line at an angle of 45° , whereas in *P. karoensis* the spermathecae (Fig. 47) are produced laterally, are thin and long and parallel to the epigastric groove at an angle of 90° to the common median line, and are hooked apically. In the male of *P. leppanae* the spur at the base of the embolus (Fig. 59) is greatly reduced to a low ridge, and the embolus itself is deeply channelled along its anterior face (Fig. 62). In all other species in the group, the embolus column is entire and not channelled.

Distribution: Grahamstown and Alicedale districts, eastern Cape, South Africa..

Redescription of holotype female:

Total length: 25.00 mm.

Colour and markings: From above, a mottled greyish brown with an outlined cardiac marking dorsally on abdomen flanked by a series of paired paler patches. Abdomen ventrally with typical dark brown to black crescentic marking immediately posterior to epigastric groove followed by a profusion of small round white spots against a rich reddish brown background. White spots continue on the otherwise dark ventral surface of femora. Femora dorsally lighter with scattered darker spots. Sternum with 2 medially interrupted transverse black bands in line with anterior faces of coxae II and III and a pair of dark spots in line with the anterior face of coxae IV. Metatarsi and tarsi dark. Carapace dorsally with paler median line running from between PME to thoracic fovea.

Carapace: Dorsally 12.25 long, 9.63 wide between leg bases II. Head region 6.06 wide across PER; thoracic fovea 3.50 long, occupying 0.29X of CL and 0.36X of CW. **Eyes:** Eye diameters: AME 0.51, ALE 0.89, PME 0.65, PLE 0.66, PER 4.13 wide, wider than AER by 2.36 X and occupying 0.68 X of HW and 0.43 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.76:1.27:1.30; distances separating eyes: AME-ALE 0.12, AME-AME 0.43, AME-PME 0.88, ALE-PLE 0.80, PME-PLE 0.62, PME-PME 0.71; MOQ dimensions: MOQA 1.42, MOQP 1.97, MOQL 1.88, MOQ 1.05 X longer than wide, narrowed anteriorly, with MOQP 1.39 X wider than MOQA. Clypeus 0.65 high, 1.27 X diameter of AME. **Chelicerae:** 4.94 long, 2.75 wide, 1.80 X longer than wide. **Sternum:** 5.31 long, 3.38 wide between coxae II, 1.47 X longer than wide and 3.38 wide between coxae I. **Labium:** 2.25 wide, 1.23 long, 1.83 X wider than long, occupying 0.67 X of SW between coxae I. **Maxillae:** 2.80 long, 2.22 wide, 1.26 X longer than wide. Cheliceral margin teeth typical of genus (3 retromarginal and 3 anteromarginal teeth but right chelicera has a small fourth, additional retromarginal tooth apically).

Abdomen: 12.75 long and 8.13 wide.

Epigynum (Figs 57–58): Externally, heart-shaped with obliquely sloping shoulders and a relatively shallowly produced median lobe which is a little wider than long (Fig. 57). Internally, spermathecae stout, short, straight and project anterolaterally at 45° to a common median line (Fig. 58).

Legs: Spine pattern typical of genus. Measurements:

	Palpus	I	II	III	IV
Femur	4.25	12.50	13.13	11.25	12.75
Patella	1.88	5.75	5.75	5.00	5.00
Tibia	2.88	11.00	11.63	8.88	10.00
Metatarsus	—	10.88	10.88	7.75	10.00
Tarsus	5.00	2.75	2.63	2.13	2.38
Total:	14.01	42.88	44.02	35.01	40.13

Description of male:

Described reference male: Cape: Grahamstown, 6 Gilbert Street, found in house, 10.vii.1982, Mrs Julia Stone (NMSA).

Total length: 16.63 mm.

Colour and markings: As female except abdomen more orange than reddish brown ventrally.

Carapace: Dorsally 8.88 long, 7.88 wide between leg bases II. Head region 4.44 wide across PER; thoracic fovea 2.75 long, occupying 0.31 X of CL and 0.35 X of CW. *Eyes:* Eye diameters: AME 0.42, ALE 0.75, PME 0.49, PLE 0.49, PER 3.06 wide, wider than AER by 1.20 X and occupying 0.69 X of HW and 0.39 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.81:1.19:1.19; distances separating eyes: AME-ALE 0.11, AME-AME 0.28, AME-PME 0.85, ALE-PLE 0.55, PME-PLE 0.49, PME-PME 0.46; MOQ dimensions: MOQA 1.11, MOQP 1.51, MOQL 1.38, MOQ 0.92 X longer than wide; narrowed anteriorly, with MOQP 1.36 X wider than MOQA; clypeus 0.46 high, 1.11 X diameter of AME. *Chelicerae:* 3.13 long, 1.88 wide, 1.67 X longer than wide. *Sternum:* 4.38 long, 3.31 wide between coxae II, 1.32 X longer than wide and 2.50 wide between coxae I. *Labium:* 1.57 wide, 0.86 long, 1.82 X wider than long, occupying 0.63 X of SW between coxae I. *Maxillae:* 2.18 long, 1.32 wide, 1.65 X longer than wide. Cheliceral margin teeth typical of genus with 3 retromarginal and 3 anteromarginal teeth except that there is a small, additional, apical retromarginal tooth on left chelicera.

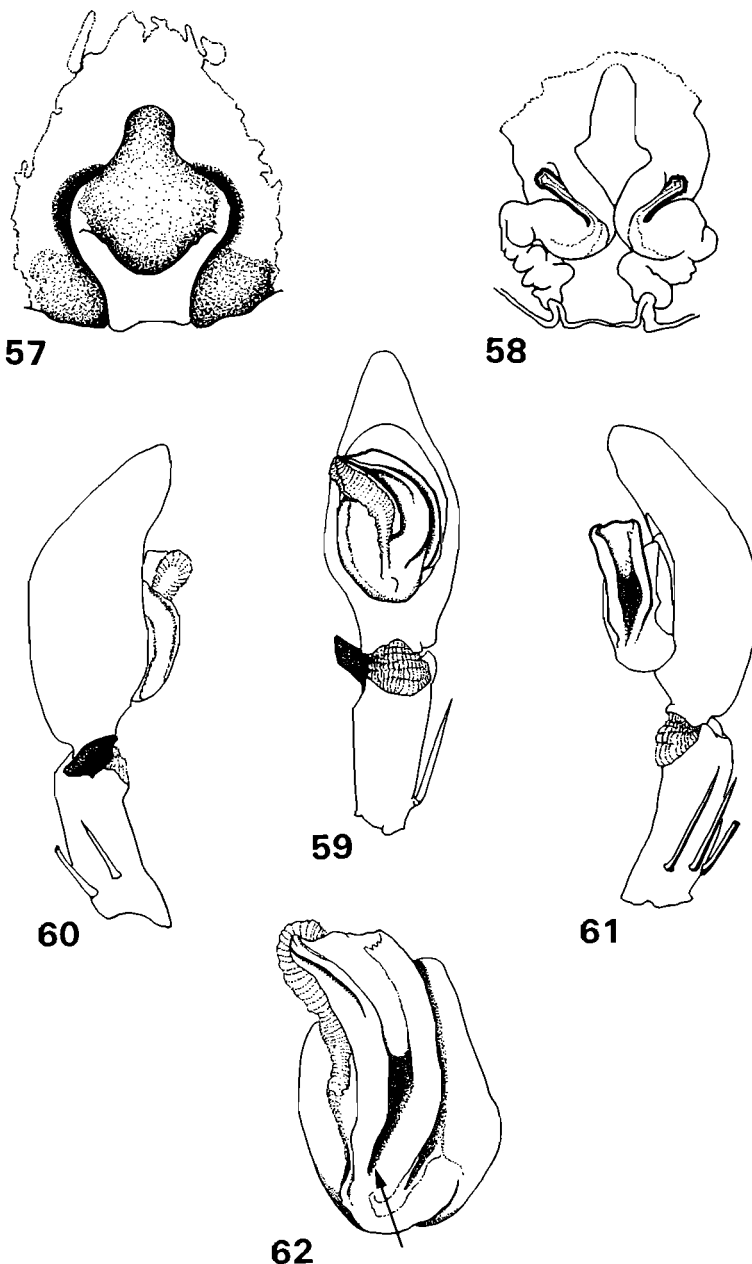
Abdomen: 7.75 long and 4.63 wide.

Pedipalp: (Figs 59–62) Spur at base of embolus reduced to a low ridge (Fig. 59). Stem of embolus deeply grooved (arrow, Fig. 62) anterolaterally along its length, widening apically into a flat blade. Conductor membranous and recurved below embolus apically. Tibial apophysis elongate with a proximal lobe forming a notched apex from retrolateral aspect (Fig. 60).

Legs: Spines typical of genus. Measurements:

	Palpus	I	II	III	IV
Femur	3.13	11.50	11.88	10.13	11.88
Patella	1.75	4.88	5.13	4.00	4.13
Tibia	1.88	10.88	10.88	7.88	9.38
Metatarsus	—	10.63	10.63	7.63	8.88
Tarsus	4.00	2.75	2.75	2.25	2.50
Total:	10.76	40.64	41.27	31.89	36.77

Additional material examined: SOUTH AFRICA: **Cape:** Alicedale: 1 ♀ (AMGS 2561), 1 ♀ (AMGS 1816), 1 ♂ (AMGS 2349); Grahamstown: 1 ♀ (AMGS 2924), 1 ♀, 22.x.1905, Miss M. Pinnock (AMGS 687), 'Penesck', 1 ♀ (AMGS 6363), Kowie Road, 3 miles fr. Stones Hill, 1 ♂, vii.1945 (AMGS).



Figs 57–62. *Palystes leppanae* Pocock, 1902. 57. External female epigynum. 58. Internal epigynum (holotype female, BMNH 1901.3.13-258). 59. Ventral aspect, male pedipalp. 60. Retrolateral aspect. 61. Anterolateral aspect. 62. Detail of anterolateral aspect of embolus (described male, NMSA, 6 Gilbert Street, Grahamstown).

Palystes perornatus Pocock, 1900

Figs 63–69, 76

Palystes perornatus Pocock, 1900: 331, Pl. III, Fig.10. Syntype series: 1 adult ♀ [here designated as lectotype], 2 subadult ♀ and 1 juvenile ♀ [here designated as paralectotypes], South Africa: Cape Province: 'Queenstown', 'presented 15.v.99', Capt. C. K. Bushe (BMNH 1899.7.28.3-6) [examined].

Remarks: Pocock briefly described an adult female and illustrated its epigynum, from 'Queenstown, Cape Colony', donated by Captain C. K. Bushe. There is a vial in BMNH with an adult female, 2 subadult females and a juvenile, all belonging to the same species and so labelled above. The label data agree with information in the description, and the adult female matches Pocock's description and illustration of the epigynum. The total length of the adult female specimen is 22.63 mm which is very close to the length given by Pocock (25 mm); the discrepancy is probably the result of shrinkage of the abdomen in alcohol. Although Pocock's description is that of an adult female, he does not specify how many specimens he saw. The vial contents suggest that he probably saw all four specimens (since four specimens donated by Captain Bushe were entered together in the BMNH register) and that the four form a syntype series. For this reason I have designated the adult female, which was illustrated by Pocock (Plate III, Fig. 10), as the lectotype. It has been separated from the remainder of the syntype series, which now become paralectotypes.

Diagnosis: Median lobe of female epigynal septum slightly longer than wide to slightly wider than long (Figs 63, 68, 70) (as opposed to very much wider than long or much longer than wide as in other species in this group). Internally spermathecae are straight, stout, inserted internally on supporting lobes, produced laterally and lie horizontally at 90 to the median plane (Figs 64, 69). In all other species the spermathecae lie between 45 and 2 to the median plane or are horizontal but hooked apically (*P. karooensis*). In the male, the tibial apophysis projects ventrally and is an entire, blunt-tipped attenuate spur. In other species, the apophysis is bifurcate or trifurcate. The blade of the embolus is not grooved proximally as is *P. leppanae*. The membranous conductor, in addition to recurving apically over the embolus as in *P. karooensis*, differs from all other species in the group in that it also recurves over the proximal lateral margin of the embolus blade. Sternal markings of both sexes throughout the species range is variable, ranging from a single transverse band at the anterior faces of coxae II with a second, medially interrupted band at coxae III, to 2 uninterrupted bands at the same position, which may or may not be connected medially.

Distribution: From the Amatola Mountains and Queenstown district (eastern Cape) through Transkei to Port Edward in south-eastern Natal, South Africa.

Redescription of lectotype female:

Total length: 22.63 mm.

Colour and markings: Specimen somewhat faded but markings still clear. Abdomen dorsally mottled greyish brown, with an outlined cardiac marking medially. Abdomen ventrally with typical dark brown to black crescentic marking immediately posterior to epigastric groove, followed by round white spots against a

faded reddish brown field. White spots continue on ventral surface of femora. Sternum with single transverse black band in line with anterior faces of coxae II followed by a medially interrupted bar at coxae III (similar to ventral markings of a female from Port Edward (Fig. 67)). Carapace dorsally with paler, medial line running from between PME to thoracic fovea.

Carapace: Dorsally 10.75 long, 9.13 wide between leg bases II. Head region 5.19 wide across PER; thoracic fovea 3.00 long, occupying 0.28 X of CL and 0.33 X of CW. *Eyes*: Eye diameters: AME 0.46, ALE 0.69, PME 0.51, PLE 0.51, PER 3.31 wide, wider than AER by 1.15 X and occupying 0.64 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.50:1.10:1.10; distances separating eyes: AME-ALE 0.15, AME-AME 0.42, AME-PME 0.85, ALE-PLE 0.69, PME-PLE 0.54, PME-PME 0.49; MOQ dimensions: MOQA 1.26, MOQP 1.54, MOQL 1.69, MOQ 1.10 X longer than wide, narrowed anteriorly, with MOQP 1.22 X wider than MOQA. Clypeus 0.38 high, 0.83 X diameter of AME. *Chelicerae*: 4.06 long, 2.38 wide, 1.71 X longer than wide. *Sternum*: 4.69 long, 3.56 wide between coxae II, 1.32 X longer than wide and 2.81 wide between coxae I. *Labium*: 1.85 wide, 1.05 long, 1.76 X wider than long, occupying 0.66 X of SW between coxae I. *Maxillae*: 2.55 long, 1.78 wide, 1.43 X longer than wide.

Abdomen: 11.88 long and 7.13 wide.

Epigynum (Figs 63–64): Externally with well developed, produced, median septum lobe and narrow neck (Fig. 63). Externally, spermathecae (Fig. 64) straight, horizontal (90 to median longitudinal line), inserted internally on supporting lobes and project laterally (away from the median line). Illustrations of an additional female from Queenstown (Figs 68–70) show minor variations in the external epigynum and internal support collar.

Legs: Spine pattern typical of genus, but with femora IV on both sides 3:2:2. Both proximal and distal tibial dorsal spines are present on tibiae I–III on both sides, while on tibiae IV on both sides only distal dorsal spine present. Measurements:

	Palpus	I	II	III	IV
Femur	3.75	12.00	12.13	10.63	11.88
Patella	2.25	5.25	5.38	4.38	4.38
Tibia	2.75	10.63	10.63	8.38	9.75
Metatarsus	—	10.00	9.75	7.25	9.25
Tarsus	4.25	2.75	2.63	2.00	2.13
Total:	13.00	40.63	40.52	32.64	37.39

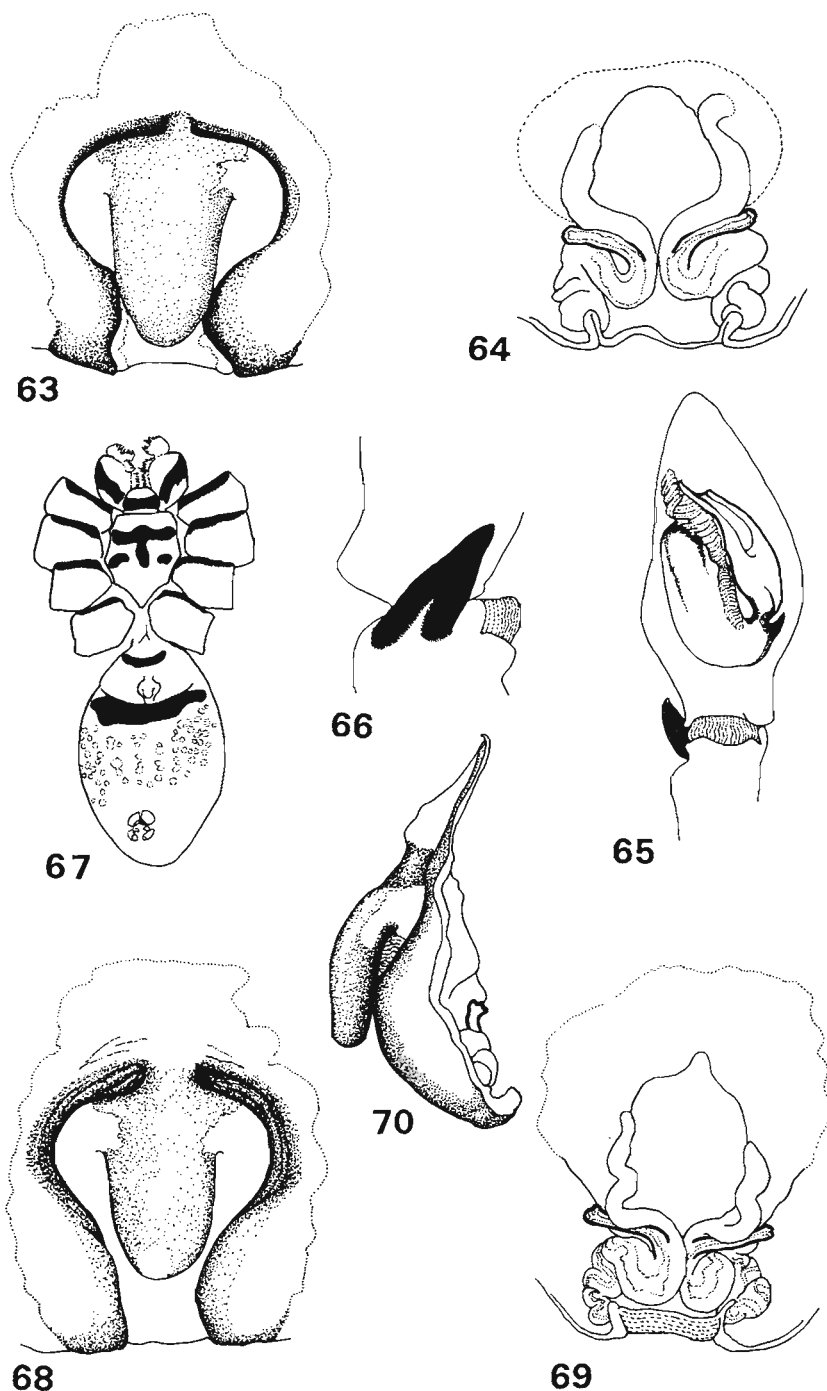
Description of male:

Based on an adult from: Natal: Port Edward, Blencathra Farm, 31°02'S 30°10'E, 5km NW. of Port Edward, 335 m, inside house, 2.iv.1983, June Stannard (NMSA).

Total length: 22.25 mm.

Colour and markings: As in female except: specimen not faded, and paired paler patches flanking cardiac marking evident down back of abdomen. Femora dorsally mottled with black. Second transverse black band of sternum continuous and connected medially with anterior band. Sternal bands in other males, including those from Port Edward, vary from form described above to a single transverse band with a medially interrupted second band at coxae III.

Carapace: Dorsally 11.00 long, 8.75 wide between leg bases II. Head region 4.69



Figs 63–70. *Palystes perornatus* Pocock, 1900. 63. External female epigynum. 64. Internal epigynum (lectotype female, BMNH 1899.7.2.8.3-6, Queenstown). 65. Ventral aspect, male pedipalp. 66. Retrolateral aspect, tibial apophysis (AMGS 2052, Shawbury, Qumbu, Transkei). 67. Ventral aspect of spider, showing markings (NMSA, Port Edward, April 1984). 68. External female epigynum. 69. Internal epigynum. 70. Lateral aspect, median septum (AMGS, Queenstown, G. Rattray).

wide across PER; thoracic fovea 3.38 long, occupying 0.31 X of CL and 0.39 X of CW. *Eyes*: Eye diameters: AME 0.51, ALE 0.69, PME 0.52, PLE 0.51, PER 3.13 wide, wider than AER by 1.19 X and occupying 0.67 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.36:1.03:1.00; distances separating eyes: AME-ALE 0.11, AME-AME 0.35, AME-PME 0.78, ALE-PLE 0.77, PME-PLE 0.55, PME-PME 0.54; MOQ dimensions: MOQA 1.23, MOQP 1.54, MOQL 1.69, MOQ 1.10 X longer than wide; narrowed anteriorly, with MOQP 1.25 X wider than MOQA; clypeus 0.54 high, 1.06 X diameter of AME. *Chelicerae*: 3.75 long, 2.19 wide, 1.71 X longer than wide. *Sternum*: 4.56 long, 3.63 wide between coxae II, 1.26 X longer than wide and 3.13 wide between coxae I. *Labium*: 1.75 wide, 1.08 long, 1.63 X wider than long, occupying 0.56 X of SW between coxae I. *Maxillae*: 2.55 long, 1.54 wide, 1.66 X longer than wide.

Abdomen: 11.25 long and 7.50 wide.

Pedipalp (Figs 65–66): Prominent, hooked spur at base of embolus (Fig. 65). Stem of embolus entire, not grooved along its length, widening into a flat blade (Fig. 65). Conductor membranous and recurved over blade of embolus apically and also over proximal lateral margin (Fig. 65). Tibial apophysis elongate, apically blunt-pointed but entire (Fig. 66).

Legs: Spines typical of genus but femora IV(3:2:2) on both sides. Tibiae dorsally with both proximal and distal spines present on all legs except right tibia III with only a distal spine. Measurements:

	Palpus	I	II	III	IV
Femur	4.00	13.38	14.25	12.38	13.75
Patella	1.88	5.38	5.50	4.13	4.00
Tibia	2.50	13.25	13.38	10.38	11.50
Metatarsus	–	12.75	12.75	9.38	11.38
Tarsus	4.63	3.13	3.13	2.50	2.88
Total:	13.01	47.89	49.01	38.77	43.51

Additional material examined: SOUTH AFRICA: **Cape**: Alice: Hogsback Mountain 'One', +6100 ft, 1 ♀, 16.x.1982, base of cliffs, SW aspect, under stone, P. G. Hawkes (NMSA); Hogsback, 32°36'S 27°01'E, 1 ♀, 11.iii.1979, P. M. C. Croeser (NMSA); Amatola Mountains, Hogsback Forestry camp site, 32.36S 26.56E, 1 ♀, 14.xii.1985 (on flattened, ovate, orange, unprotected egg sac, 30 X 15 mm, fastened by silk strands to underside of protected overhanging rock), B. Londt (NMSA); Queenstown, 1 ♀, G. Ratray (AMGS); Queenstown, 2 ♀ 2 ♂ 1 subad. ♀, E. T. Wells (BMNH 01.3.12.3-7); Tarkastad, 1903, R. Broom (SAMC 13348). **Transkei**: 1 ♀, W. Roberts (AMGS 4878); Qumbu [40 km N. Umtata], Shawbury, 2 ♂ 2 ♀ 5 juv. (AMGS 2052). **Natal**: Port Edward, 31°03'S 30°13'E, 1 ♀, viii.1985, J. Stannard (NMSA); Port Edward, Blencathra Farm, 31°02'S 30°10'E, 5 km NW. Port Edward, 335 m, 1 ♂ (in pot plant), 1 ♂, 25.iii.1983 (early morning in house), 2 ♂, 16.iv.1983 (in house 11 pm – rainstorm), 1 ♀, iv.1984 (at night in house), 1 ♂, iv.1984 (caught in same room with ♂ *P. superciliosus*), 1 ♂, iv.1986 (in house a night), J. Stannard (NMSA).

***Palystes karoensis* sp. n.**

Figs 45–56, 76

Type material:

Holotype: Adult ♀, SOUTH AFRICA: **Cape:** Beaufort West, Klipbank 3222 Ad [between 32°15'S–32°30'S & 2215'E–22°30'E], Stolshoek, 2,800 ft, 1.ii.85, J. Brau F15a (NMSA T501).

Paratypes: SOUTH AFRICA: **Cape:** Beaufort West, Stolshoek, Karoo National Park, 1♂, 7.iv.1985, H. Braack (NMSA T502), Aberdeen [near Graaff-Reinet], 'Leliefontein' farm, 1♀, under stone, 1972–1973, M. Stiller (PPRI 'AcAT '80/168); Cape Town environs, 1♀, 1967, P. L. G. Benoit (MRAC 146.161); Cradock, 1♀, xii.1976 (SAMC C1170); De Wet [?De Wet: 6 km NW. Worcester], 1♀, 9.x.1940 (TMSA); Graaff-Reinet, 1♀ 2♂ 1subad.♂, 26.viii.1920, Rev. J. H. Whaits (AMGS 4281); 1♀ (AMGS 1830); Murraysburg, 31°58'S 23°45'E, 1♀, on wall in house, 20.vii.1987, A. van den Berg (PPRI 'AcAT '87/841); Waterford [33°04'S 25°00'E, Klein Winterhoek Mountains, inland from Port Elizabeth], 1♀, iii.1984, B. Rubidge (NMBA 097).

Type locality: Stolshoek, Karoo National Park [ca 32°18'S 22°30'E], immediately NW. of Beaufort West, Great Karoo region of the Cape, South Africa.

Etymology: Named after the Cape's Great Karoo region, in which most specimens have been collected.

Remarks: Further collecting is necessary to define more clearly the range of this species which includes an outlier population in the Cedarville-Kokstad area of north-eastern Transkei and south-eastern Natal. Further material from the outlier population may reveal specific differences that separate it from the Karoo population.

Diagnosis: *P. karoensis* most closely resembles *P. perornatus* in general body form and the genitalia, but the two species are relatively easily distinguished from each other. In adult female *P. karoensis* the median lobe of the septum (Figs 46, 52) ranges from wider than long to slightly longer than wide, compared with very much longer than wide in *P. perornatus* (Figs 63, 68), and the spermathecae are very long, thin and apically distinctly hooked towards the anterior (Fig. 47), as opposed to short, stout and straight (Fig. 64). In adult male *P. karoensis* the tibial apophysis is bifurcate or deeply notched apically (Figs 49, 51, 55, 56), as opposed to entire (Fig. 66).

Distribution: Chiefly the interior montane areas of the Great Karoo including the districts of Beaufort West, Murraysburg, Graaff-Reinet and Cradock, Cape, South Africa. Also including the Winterhoekberge Mountains north-west of Port Elizabeth.

Description of holotype female:

Total length: 22.38 mm.

Colour and markings: Dorsally mottled dark brown, black and light brown; abdomen with a dark outlined cardiac marking flanked by paired paler patches diminishing in size posteriorly. Ventrally, a black transverse bar immediately posterior to epigastric groove. Posterior to the bar are numerous round white spots against a rich dark red-brown background; the spots continue on the underside of the otherwise dark femora. Femora ventrally becoming orange apically, dorsally lighter

and with scattered small dark spots. Sternum with 2 vestigial, widely interrupted bars of darker setae at coxae II and III.

Carapace: Dorsally 10.25 long, 8.25 wide between leg bases II. Head region 4.88 wide across PER; thoracic fovea 2.88 long, occupying 0.28 X of CL and 0.35 X of CW. *Eyes*: Eye diameters: AME 0.46, ALE 0.69, PME 0.54, PLE 0.54, PER 3.00 wide, wider than AER by 1.07 X and occupying 0.62 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.43:1.17:1.17; distances separating eyes: AME-ALE 0.12, AME-AME 0.35, AME-PME 0.75, ALE-PLE 0.69, PME-PLE 0.48, PME-PME 0.48; MOQ dimensions: MOQA 1.43, MOQP 1.52, MOQL 1.54, MOQ 0.98 X longer than wide, narrowed anteriorly, with MOQP 1.06 X wider than MOQA. Clypeus 0.54 high, 1.17 X diameter of AME. *Chelicerae*: 3.88 long, 2.25 wide, 1.72 X longer than wide. *Sternum*: 4.19 long, 3.56 wide between coxae II, 1.18 X longer than wide and 3.00 wide between coxae I. *Labium*: 1.94 wide, 1.08 long, 1.80 X wider than long, occupying 0.65 X of SW between coxae I. *Maxillae*: 2.31 long, 1.51 wide, 1.53 X longer than wide.

Abdomen: 12.13 long and 8.25 wide.

Epigynum (Figs 46–47): Externally, median septum lobe produced but short and much wider than long. Internally, spermathecae produced laterally, parallel to epigastric groove. Spermathecae long, thin and distally reflexed anteriorly, following profile of invaginated support collar (Fig. 47). Cedarville female has a slightly narrower epigynal 'neck' externally (Fig. 52) and proportionately slightly shorter, stouter spermathecae (Fig. 53).

Legs: Spine pattern typical of genus, but with femora IV(3:2:2) and tibiae dorsally with proximal and distal spines on I–III but only a distal spine on IV. Measurements:

	Palpus	I	II	III	IV
Femur	3.75	11.88	12.25	10.13	12.25
Patella	1.63	4.63	4.63	4.00	3.88
Tibia	2.50	10.38	10.63	8.38	9.25
Metatarsus	—	10.00	10.13	7.13	9.13
Tarsus	4.13	2.63	2.50	2.13	2.75
Total:	12.01	39.52	40.14	31.77	37.26

Description of paratype male (NMSA T502):

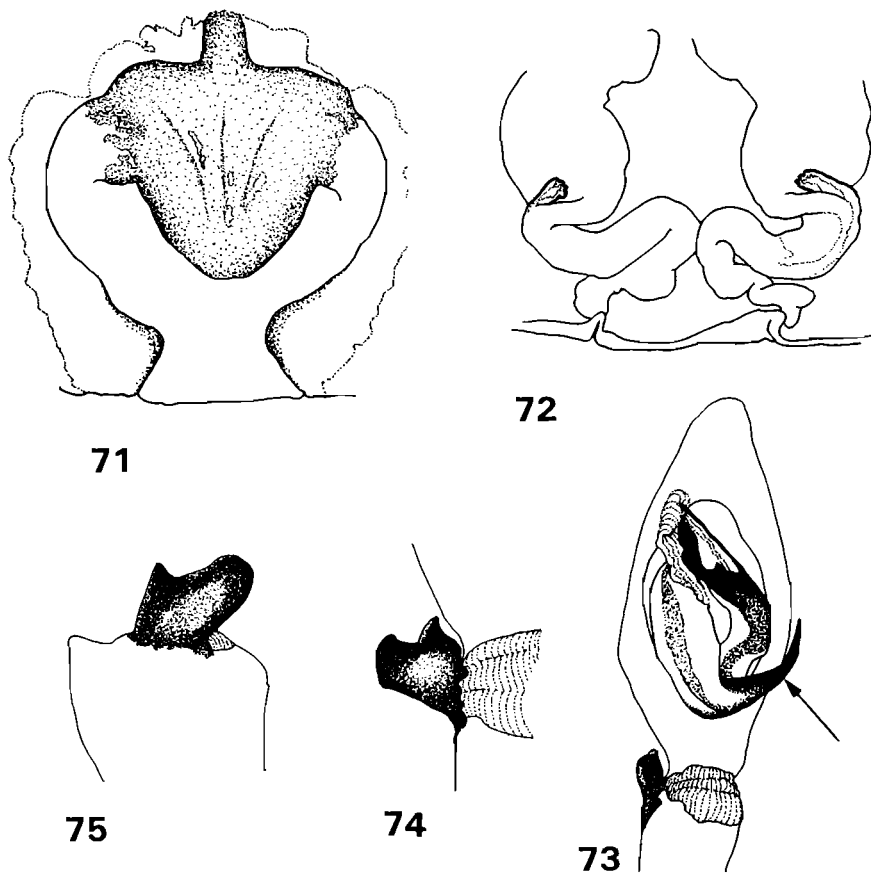
The abdomen is crumpled, and crease marks on the legs suggest the specimen was newly ecdysed and preserved before the cuticle had hardened.

Total length: 14.76 mm.

Colour and markings: Same as female except area posterior to epigastric groove more orange-brown than a rich red-brown.

Carapace: Dorsally 7.63 long, 6.38 wide between leg bases II. Head region 3.44 wide across PER; thoracic fovea 2.13 long, occupying 0.28 X of CL and 0.33 X of CW. *Eyes*: Eye diameters: AME 0.43, ALE 0.63, PME 0.45, PLE 0.43, PER 2.63 wide, wider than AER by 1.17 X and occupying 0.76 X of HW and 0.41 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.46:1.04:1.00; distances separating eyes: AME-ALE 0.09, AME-AME 0.23, AME-PME 0.51, ALE-PLE 0.45, PME-PLE 0.38, PME-PME 0.43; MOQ dimensions: MOQA 0.98, MOQP 1.26, MOQL 1.38, MOQ 1.10 X longer than wide; narrowed anteriorly, with MOQP 1.28 X wider than MOQA; clypeus 0.18 high, 0.43 X diameter of AME. *Chelicerae*: 2.63 long, 1.50

wide, 1.75 X longer than wide. Cheliceral teeth with an additional small apical tooth on both retro- and anteromargins on left chelicera and on anteromargin of right chelicera (Fig. 48), but absent in other specimens. *Sternum*: 3.31 long, 3.00 wide between coxae II, 1.10 X longer than wide and 2.19 wide between coxae I. *Labium*: 1.38 wide, 0.92 long, 1.50 X wider than long, occupying 0.63 X of SW between coxae I. *Maxillae*: 2.06 long, 1.17 wide, 1.76 X longer than wide.



Figs 71–75. *Palystes stuarti* sp. n. 71. External female epigynum. 72. Internal epigynum (holotype female, NMSA T499, Nieuwoudtville). 73. Ventral aspect, male pedipalp. 74. Detail of ventral aspect, tibial apophysis. 75. Detail of retrolateral aspect of apophysis (paratype male, NMSA T500, Nieuwoudtville).

Abdomen: 7.13 long and 5.13 wide.

Pedipalp (Figs 49–51): Blade of embolus with sinuate lateral margin, column entire (not grooved). Spur at base of embolus short and hooked. Tibial apophysis bifurcate apically with lateral lobe. Ntolas male (Figs 54–56) has a slightly more spatulate, obtusely-pointed embolus apically (Fig. 54), and the tibial apophysis is more clearly bifurcate (Figs 55–56).

Legs: Spines typical of genus but with variations: left femora I+II(3:2:3), III(2:2:3), IV(3:3:2); right femora I+II(3:2:2), III(3:2:3), IV(3:2:2). Tibiae dorsally with full complement of proximal and distal spines on I–IV, but some very small. Measurements:

	Palpus	I	II	III	IV
Femur	3.13	12.00	12.63	10.00	12.13
Patella	1.50	4.25	4.13	3.38	3.25
Tibia	2.13	11.75	12.13	9.25	10.13
Metatarsus	–	11.50	11.38	7.88	10.13
Tarsus	3.63	2.88	2.88	2.13	2.38
Total:	10.39	42.38	43.15	32.64	38.02

Additional material examined: SOUTH AFRICA: **Transkei/Natal**: Cedarville, Mvenyane, 1♀ (AMGS 2344); Ntolas [30°35'S 29°05'E, 30 km W. Kokstad], 1♂ (AMGS 2110).

***Palystes stuarti* sp. n.**

Figs 71–75, 76

Type material:

Holotype: adult ♀, SOUTH AFRICA: **Cape**: 25 km S. Nieuwoudtville, 31°22'S 19°06'E, Sewefontein Farm, 700 m, in house in Cederberg fynbos, ii.1990, C. T. Stuart, collector's no. 3674 (NMSA T499).

Paratype: SOUTH AFRICA: **Cape**: Same data except: 1♂ (paralysed spider collected with pompilid wasp on stoep [= verandah] of house in Cederberg fynbos), 25.iii.1990, C. T. Stuart, collector's no. 3677 (NMSA T500).

Type locality: Both holotype and paratype collected on Sewefontein Farm, 25 km S. Nieuwoudtville (31°22'S 19°06'E), western Cape, South Africa.

Etymology: Named after author-naturalist Mr Chris Stuart, the collector of the type series.

Diagnosis: Spermathecae (Fig. 72) inserted laterally on the invaginations of the support collar and reflexed inwards towards the median line as in *P. crawshayi* (Fig. 40), but median lobe of septum well developed (Fig. 71) and produced anteriorly and not transversely as in *P. crawshayi* (Fig. 39). Spur at base of embolus (Fig. 73) far longer than that of other species in *P. lunatus* group (spur in *P. stuarti* more than half as long as embolus, compared with less than quarter as long).

Distribution: Only known from the type locality.

Description of holotype female (NMSA T499):

Total length: 33.75 mm.

Colour and markings: From above entirely mottled black and brown. Abdomen dorsally with an outlined cardiac marking medially, flanked by irregular large paired paler patches. Abdomen ventrally with dark brown to black crescentic marking immediately posterior to epigastric groove, followed by round white spots against a rich reddish brown field. White spots continue on ventral surface of femora, which are otherwise dark below but lighter above with several dark spots. Sternum with 2 medially interrupted black transverse bars in line with anterior faces of coxae II and III. Labium

and maxillae, dark reddish black. Metatarsi and tarsi dark dorsally and ventrally. Carapace dorsally with a paler medial line running from between PME to thoracic fovea.

Carapace: Dorsally 15.00 long, 12.25 wide between leg bases II. Head region 6.88 wide across PER; thoracic fovea 3.50 long, occupying 0.23 X of CL and 0.29 X of CW. *Eyes*: Eye diameters: AME 0.62, ALE 1.00, PME 0.77, PLE 0.69, PER 4.38 wide, wider than AER by 1.21 X and occupying 0.64 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.63:1.25:1.13; distances separating eyes: AME-ALE 0.15, AME-AME 0.46, AME-PME 1.05, ALE-PLE 0.89, PME-PLE 0.75, PME-PME 0.66; MOQ dimensions: MOQA 1.57, MOQP 2.09, MOQL 1.69, MOQ 0.81 X longer than wide, narrowed anteriorly, with MOQP 1.33 X wider than MOQA. Clypeus 0.46 high, 0.75 X diameter of AME. *Chelicerae*: 5.63 long, 2.81 wide, 2.00 X longer than wide. *Sternum*: 5.94 long, 4.69 wide between coxae II, 1.27 X longer than wide and 3.63 wide between coxae I. *Labium*: 2.62 wide, 1.85 long, 1.42 X wider than long, occupying 0.72 X of SW between coxae I. *Maxillae*: 3.85 long, 2.31 wide, 1.67 X longer than wide. Cheliceral margin teeth typical of genus (3 retromarginal and 3 anteromarginal teeth), but left chelicera has a small fourth, additional anteromarginal tooth apically.

Abdomen: 18.75 long and 13.38 wide.

Epigynum (Figs 71–72): Externally with well-developed, produced, median septum lobe (Fig. 71). Internally, spermathecae (Fig. 72) inserted laterally on invaginations of support collar, and reflexed inwards.

Legs: Spine pattern typical of genus, but femora IV on both sides 3:2:2 and right femur II 1:1:3. Both proximal and distal tibial dorsal spines present on tibiae I–IV on both sides, except for left tibia IV in which proximal spine absent (although present on right leg IV, spine smaller and thinner than on other legs). Measurements:

	Palpus	I	II	III	IV
Femur	5.00	15.63	16.25	14.00	16.50
Patella	2.50	6.88	6.88	5.63	5.63
Tibia	3.38	15.25	15.63	12.25	13.38
Metatarsus	—	15.00	14.38	10.63	13.25
Tarsus	5.75	3.50	3.13	2.63	3.13
Total:	16.63	56.26	56.27	45.14	51.89

Description of paratype male (NMSA T500):

Total length: 24.75 mm.

Colour and markings: As in female, except: abdomen ventrally darker.

Carapace: Dorsally 12.50 long, 9.50 wide between leg bases II. Head region 5.44 wide across PER; thoracic fovea 3.25 long, occupying 0.26 X of CL and 0.34 X of CW. *Eyes*: Eye diameters: AME 0.49, ALE 0.85, PME 0.62, PLE 0.54, PER 3.75 wide, wider than AER by 1.20 X and occupying 0.69 X of HW and 0.39 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.72:1.25:1.09; distances separating eyes: AME-ALE 0.17, AME-AME 0.43, AME-PME 1.05, ALE-PLE 0.75, PME-PLE 0.69, PME-PME 0.54; MOQ dimensions: MOQA 1.26, MOQP 1.78, MOQL 1.85, MOQ 0.97 X longer than wide; narrowed anteriorly, with MOQP 1.41 X wider than MOQA; clypeus 0.43 high, 0.88 X diameter of AME. *Chelicerae*: 4.06 long, 2.25 wide, 1.81 X longer than wide. *Sternum*: 5.00 long, 3.81 wide between coxae II, 1.31 X longer than wide and 3.25 wide between coxae I. *Labium*: 1.97 wide, 1.14 long, 1.73 X wider than long, occupying 0.61 X of SW between coxae I. *Maxillae*: 2.92 long, 1.91 wide, 1.53 X longer than wide.

Abdomen: 12.25 long and 7.50 wide.

Pedipalp (Figs 73–75): Elongate spur at base of embolus (arrow, Fig. 73) more than half as long as embolus. Tibial apophysis (Figs 74, 75) with prominent median spur laterally.

Legs: Spines typical of genus but with femora IV (3:2:2) on both sides. Tibiae dorsally with both proximal and distal spines present on legs I–III, but only a distal spine on legs IV. Measurements:

	Palpus	I	II	III	IV
Femur	5.00	15.38	16.88	14.38	16.25
Patella	1.88	5.63	6.88	5.00	5.00
Tibia	3.13	15.63	15.88	12.63	13.38
Metatarsus	–	15.00	15.63	11.50	13.50
Tarsus	4.63	3.50	3.13	2.75	3.13
Total:	14.64	55.14	58.40	46.26	51.26

Additional material examined: None.

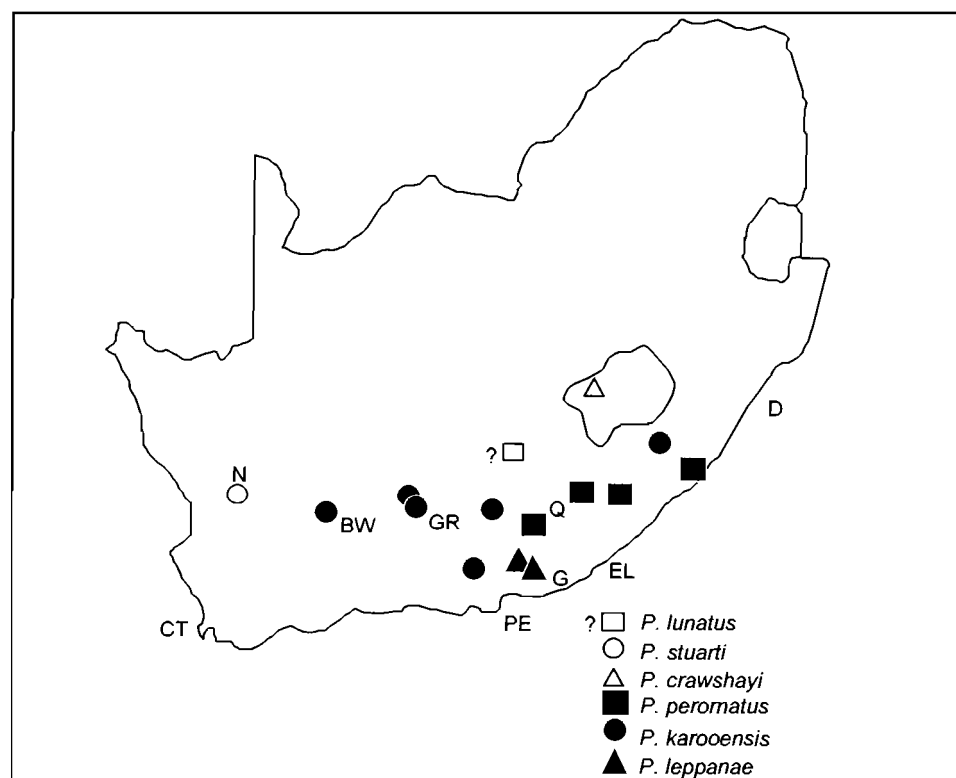


Fig 76. Map showing distribution of the *Palystes lunatus* species group. [CT = Cape Town, BW = Beaufort West, D = Durban, EL = East London, G = Grahamstown, GR = Graaff-Reinet, N = Nieuwoudtville, PE = Port Elizabeth, Q = Queenstown.]

Palystes superciliosus species group

Characterised by: Abdomen with dark transverse bar posterior to epigastric groove, with or without large to small brown spots ventrally and lateroventrally, and

chocolate-edged cream white lateral markings; femora I–II ventrally dark brown to black with a broad yellow band apically; epigynum exteriorly with septum reduced to a ‘bow-tie’-like bridge; embolus of male pedipalpal bulb narrow, with or without vertical lamellae apically, and hooked.

Included species: *Palystes superciliosus* L. Koch, 1875; *P. ellioti* Pocock, 1896; *P. hoehneli* Simon, 1890; *P. johnstoni* Pocock, 1896; *P. ansiedippenaarae* sp. n.; *P. leroyorum* sp. n.

Distribution: Central, eastern and southern Africa (Fig. 109).

Palystes superciliosus L. Koch, 1875

Figs 77–80, 109

Palystes superciliosus L. Koch, 1875: 706–708, Pl LXI, Figs 1, 1a. Syntype: adult ♂, ‘Südafrika’ Godeffroy Museum (ZMUH), here designated lectotype [examined].

Heteropoda natalia Karsch, 1878: 772–773. Holotype ♀ : ‘Port Natal’ (ZMHB) [examined]. **Syn. n.**

Palystes natalius; Pocock, 1896: 60; 1898: 59–60.

Palystes pulchripes Pocock, 1896: 60–61, Figs 4, 4a. Syntypes: 3 subadult ♀ , ‘Port Elizabeth’ (BMNH) [examined]. [Synonymised by Strand 1907b: 675.]

Palystes spenceri Pocock, 1896: 58–59, Figs 3, 3a. Syntypes: ♀ ♂, ‘Durban’ (BMNH) [examined]. [Synonymised with *P. natalius* (Karsch) by Pocock 1898: 222.] **Syn. n.**

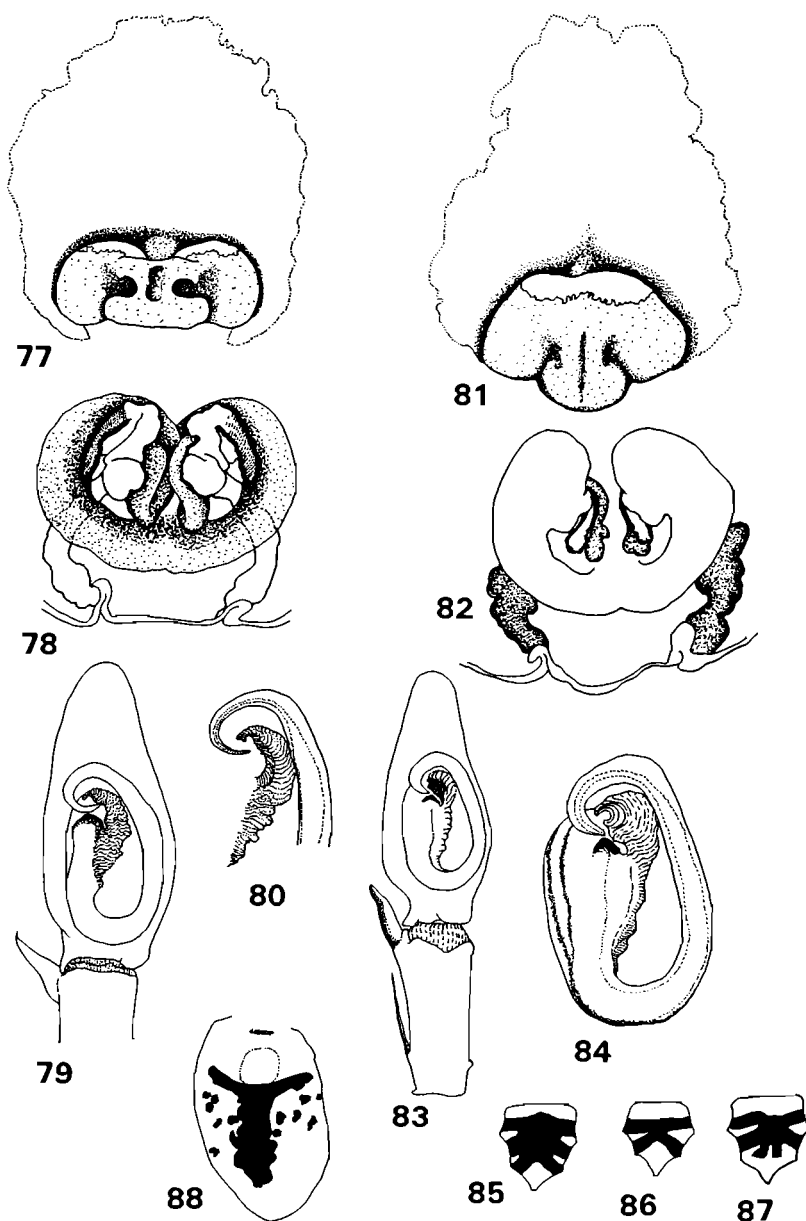
Palystes modificus Strand, 1906a: 39–41. Syntype: adult ♂, ‘Kap der guten Hoffnung’ (MWNH) [examined]. **Syn. n.**

Palystes superciliosus var. *fasciiventris* Strand, 1907b: 676–677. Syntype: ♀ , ‘Kapland’ (MNH) [examined]. **Syn. n.**

Remarks: Koch (1875) described an adult male and an adult female from ‘Südafrika’, which he stated (p. 708) were in the Godeffroy Museum collection. The male is now in ZMUH but the female has not been found. The adult male in ZMUH is well preserved and intact except for a missing left leg IV and tarsus of right leg II. The right pedipalp has been detached and placed in a microvial in the tube containing the specimen. The syntypes were originally listed among L. Koch and Keyserling types missing from the Godeffroy Museum collection by Rack (1961: 3), but the male syntype was later found and listed as such by Rack (1971: 109, 133). There is no doubt that this is the male described by L. Koch and I have accordingly designated it as lectotype. The female syntype described and illustrated by Koch is clearly conspecific.

Karsch (1878) notes that the spiders he described were donated to ZMHB by Dr Rabl Rückhard, who had received them from Mr Aurel Schultz of Port Natal [= Durban]. The adult female (numbered 2882) in ZMHB, although in poor condition, agrees in all respects with the female of *Palystes superciliosus* L. Koch, and matches Koch’s (1875: 707, 708) description and illustrations of the whole spider and of its unmistakable epigynum (Pl. LXI, Figs 1, 1a), and it is undoubtedly the specimen described by Karsch. Karsch refers only to an adult female in his description and I have accordingly determined it as the holotype of *Heteropoda natalia*. ZMHB has a second, similarly labelled specimen, a subadult female, which also belongs to *P. superciliosus*, but it is here treated as not part of Karsch’s type series.

Pocock suggested (1896) and confirmed (1898) the transfer of *Heteropoda natalia* Karsch to *Palystes* but in the first (1896) paper also described specimens of *Palystes superciliosus* under two different names: three subadult females as *P. pulchripes*



Figs 77–88. *Palystes superciliosus* L. Koch, 1875 and *P. ellioti* Pocock, 1896. 77–80. *P. superciliosus*. 77. External female epigynum. 78. Internal epigynum (lectotype female, *Heteropoda natalia* Karsch, ZMHB, Port Natal). 79. Ventral aspect, male pedipalp. 80. Detail of embolus apex (lectotype male, *P. superciliosus* L. Koch, ZMUH, South Africa). 81–88. *P. ellioti*. 81. External female epigynum. 82. Internal epigynum (lectotype female, BMNH, Uganda). 83. Ventral aspect, male pedipalp. 84. Detail of embolus (holotype male, *P. affinis* de Lessert, Usambara, Tanzania). 85–88. Ventral markings. 85. Sternum (lectotype male). 86. Sternum, paralectotype male. 87. Sternum, additional male (MRAC 831, W. Lake Kivu, eastern Zaïre). 88. Abdomen (paralectotype male).

(although tentatively suggesting that they were close to *L. Koch's* original description and illustrations of *P. superciliosus*) and an unspecified ('large') number of adult males and females as *P. spenceri* (suggesting that they were possibly the same species as *Heteropoda natalia* Karsch). Rudimentary, externally visible, folding of the epigynum is often seen in subadult females of *P. superciliosus* and is evident in the syntypes of *P. pulchripes* and Pocock's illustration (1896: Pl. VIII, Fig. 3). Pocock (1898: 222) correctly synonymised *P. spenceri* Pocock with *P. natalius*. Strand (1907b: 674) correctly confirmed that the specimens Pocock had described as *P. pulchripes* were subadult ('nicht ganz reife') females of *P. superciliosus*. The syntypes of *P. spenceri* are also conspecific with *P. superciliosus*.

Strand (1906a: 37–41) described one large and one small adult male from 'Kap der guten Hoffnung' in MWNH as *P. modificus*, noting (p. 37) that they were possibly the males of one of the already described species for which the male was not known. The large adult male *P. superciliosus* identified as a type in the collection of MWNH (labelled No. 391), agrees with the description of the larger spider described in detail by Strand, and, also on account of the label data is clearly one of the syntypes described by Strand as *P. modificus*. It is unmistakably the male of *P. superciliosus*, and I have therefore synonymised *P. modificus* Strand with *P. superciliosus*.

Strand (1907b: 676) described *P. superciliosus* var. *fasciiventris* from Grahamstown, distinguishing it on the more vivid ventral markings and a more clearly defined epigynum. He saw 'viele Exemplare' from Grahamstown donated by Brady. The syntype series, which included adult males and females, was deposited in the museum at Lübeck (collections destroyed by air bombardment in 1942). An adult female *Palystes superciliosus* from jar no. 1742 in MNHN and labelled 'Collection E. Strand Societe zoologique de France Legs 1955'; '*Palystes superciliosus* L.K. var. *fasciiventris* Strand, 1 ♀ Capland' appears to be the only remnant of the syntype series. The variation in ventral markings and clearer definition of the epigynum noted by Strand as differentiating characters, are evident in the syntype, but are well within the range of variation for *P. superciliosus*. The variations are not consistent in any one locality, nor are they linked to any variation in internal epigynal structure. I therefore regard Strand's described variation as an unjustified subspecific taxon and have synonymised it with *P. superciliosus*.

Diagnosis: Epigynum (Fig. 77) without posterior extension found in other species of this group (Figs 81, 89, 97, 104). Embolus distally (Fig. 80) unornamented with lateral flanges, tapering to a fine, attenuate, recurved point. All other males in the group have an embolus with lateral carinations distally (Figs 93, 100, 108), except *P. ellioti* (Fig. 84) which has an embolus similar in shape to that of *P. superciliosus* except that it is distally wider, flattened and bluntly pointed, and *P. leroyorum* (Fig. 101) in which is distally blade-like. Ventral abdomen with 4 longitudinal striations between spinnerets and dark transverse bar posterior to epigastric groove, but otherwise unmarked (some specimens with a faint greyish bell-shaped marking ventrally). Colouring in both sexes variable, ranging from a relatively uniform pale brown to more vividly coloured forms.

Distribution: Widely distributed throughout the eastern half of southern Africa, south

of the Limpopo, including Mozambique, Swaziland, the Transvaal, Natal, Transkei, and eastern and south-western Cape provinces of South Africa.

Redescription of lectotype male of Palystes superciliosus:

The right anterior portion of the carapace posterior to the PER was damaged while the specimen was still alive. The specimen, although faded, is otherwise in good condition, but is missing left leg IV.

Total length: 25.00 mm.

Colour and markings: Males and females have a range of markings varying from the nearly uniformly pale brown abdomen of the lectotype male to specimens of both sexes with an undulating longitudinal dark chocolate line laterally, subtended by a broader white to creamy yellow band. Abdomen ventrally without markings except for 4 longitudinal striations between spinnerets and dark transverse bar immediately posterior to epigastric groove. Sternum with single dark transverse bar between coxae II. A barely visible, faint, partly formed second bar between coxae III. Anterolateral face of coxae dark, femora with some darker mottling ventrally. Tibia banded as usual ventrally.

Carapace: Dorsally 12.75 long, 10.13 wide between leg bases II. Head region 5.44 wide across PER; thoracic fovea 3.88 long, occupying 0.30 X of CL and 0.38 X of CW. *Eyes:* Eye diameters: AME 0.54, ALE 0.85, PME 0.62, PLE 0.63, PER 3.75 wide, wider than AER by 1.22 X and occupying 69 X of HW and 0.37 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.57:1.14:1.17; distances separating eyes: AME-ALE 0.14, AME-AME 0.42, AME-PME 0.78, ALE-PLE 0.72, PME-PLE 0.65, PME-PME 0.60; MOQ dimensions: MOQA 1.51, MOQP 1.72, MOQL 1.82, MOQ 0.95 X longer than wide; narrowed anteriorly, with MOQP 1.14 X wider than MOQA; clypeus 0.62 high, 1.14 X diameter of AME. *Chelicerae:* 4.81 long, 2.63 wide, 1.83 X longer than wide. *Sternum:* 5.13 long, 3.88 wide between coxae II, 1.32 X longer than wide and 3.25 wide between coxae I. *Labium:* 2.00 wide, 1.54 long, 1.30 X wider than long, occupying 0.62 X of SW between coxae I. *Maxillae:* 2.92 long, 2.00 wide, 1.46 X longer than wide.

Abdomen: 12.25 long and 7.75 wide.

Pedipalp (Figs 79–80): Embolus robust basally, slender distally, recurved though 180, without any lateral carinations or ridges distally. Conductor membranous, large, recurved over tip of embolus (Fig. 80).

Legs: Spines typical of genus with femora I–III(3:2:3), but left leg IV missing and spination of right femur IV missing a spine (3:2:1); otherwise as for genus. *Measurements:*

	Palpus	I	II	III	IV
Femur	4.63	15.00	15.38	12.13	14.00
Patella	2.13	6.25	6.25	5.00	5.00
Tibia	2.63	14.50	14.38	10.63	11.88
Metatarsus	–	14.00	13.50	9.00	11.50
Tarsus	4.50	3.13	3.13	2.38	2.75
Total:	13.89	52.88	52.64	39.14	45.13

Redescription of holotype female of Heteropoda natalia:

Total length: 30.38 mm.

Colour and markings: Abdomen dorsally with pulmonary marking, laterally with paler longitudinal band on either side, edged dorsally with an undulating darker line.

Abdomen ventrally unmarked between spinnerets and dark transverse band posterior to epigastric groove, except for 4 longitudinal striations. Area between striations slightly darker. Sternum with single, dark transverse bar continued on anterolateral aspect of coxae II. Ventrally femora dark, tibiae I–IV with alternate 2 dark and 2 pale bands. Because of the poor condition of the holotype, the colouring of a live female from Natal (Munyawaneni Bush Camp, 28°08'S 32°02'E, Hluhluwe Game Reserve, 12.i.1995, K. R. Cradock (NMSA)), is also described here: Abdomen dorsally with deep chocolate cardiac outline marking against a greyish fawn-brown background, becoming mottled and darker to a deep chocolate posteriorly and dorso-laterally; abdomen laterally with broad cream coloured longitudinal band; abdomen ventrally with only a thin black transverse band immediately posterior to epigastric groove, otherwise pale fawn-brown; carapace dorsally pale and darker brown with pale median line from between PME to thoracic fovea; chelicerae dark to black with yellow-tipped setae and with 2 cream to white longitudinal stripes at outer edges; white clypeal 'moustache' present; long setae of mouthparts orange rust-red, as are short setae of tibiae and tarsi of the pedipalps; setae of sternum orange-yellow with uninterrupted black bar in line with anterolateral aspect of coxae II; coxae I–IV ventrally fawn tinged with yellow, anterolaterally black; femora I–II ventrally black, proximally with scattered yellow-tipped setae and a distal broad yellow band decorated with scattered fine black spots; femora III–IV ventrally yellowish fawn-brown with black spots; tibiae I–IV ventrally with usual black and yellow bands; all legs dorsally brindled fawn with some yellow, cream and black; ventral metatarsal and tarsal scopulae laterally bordered with a longitudinal fine orange line.

Carapace: Dorsally 13.00 long, 10.50 wide between leg bases II. Head region 6.25 wide across PER; thoracic fovea 3.50 long, occupying 0.27 X of CL and 0.33 X of CW. *Eyes*: Eye diameters: AME 0.63, ALE 0.91, PME 0.62, PLE 0.60, PER 4.19 wide, wider than AER by 1.20 X and occupying 0.67 X of HW and 0.40 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.44:0.98:0.94; distances separating eyes: AME–ALE 0.12, AME–AME 0.37, AME–PME 0.69, ALE–PLE 0.60, PME–PLE 0.65, PME–PME 0.63; MOQ dimensions: MOQA 1.54, MOQP 1.91, MOQL 1.69, MOQ 0.89 X longer than wide, narrowed anteriorly, with MOQP 1.24 X wider than MOQA. *Chelicerae*: 5.44 long, 2.94 wide, 1.85 X longer than wide. *Sternum*: 5.06 long, 4.13 wide between coxae II, 1.23 X longer than wide and 3.13 wide between coxae I. *Labium*: 2.18 wide, 1.69 long, 1.29 X wider than long, occupying 0.70 X of SW between coxae I. *Maxillae*: 3.32 long, 2.09 wide, 1.59 X longer than wide.

Abdomen: 17.38 long and 13.50 wide.

Epigynum (Figs 77–78): Median septum not produced posteriorly as in other species of the group. Interior epigynum with tubules leading to spermathecae enfolded to inside by lobes of support collar, spermathecae rising dorsally above support collar lobes to lie fully exposed on top of collar lobes (Fig. 78).

Legs: Spine pattern and markings typical of genus, but femora I–II(3:2:3), left femur III(3:2:2), right femur III(3:2:3) right femur IV(3:2:1) (left leg missing); patellae (1:0:1); tibiae I–III (basal and apical spines dorsally), tibia IV(dorsal apical spine only). Measurements (of left legs, except for III where right leg is used):

	Palpus	I	II	III	IV
Femur	4.63	14.13	14.00	11.25	13.38
Patella	2.25	6.25	6.00	4.75	4.63
Tibia	2.88	13.25	13.25	9.50	10.75
Metatarsus	—	13.25	12.25	7.88	10.63
Tarsus	5.0	2.88	2.88	2.25	2.75
Total:	14.76	49.76	48.38	35.63	42.14

Additional material examined: MOZAMBIQUE: Delagoa Bay, 1 ♀ (MNHN 9.959); Delagoa Bay, 3♂3♀, ?1889, J. de Coster (SAMC 2880, 2881, 2885). NAMIBIA: **Ovamboland:** Kungveld, Tsumkwe Pan [19°35'S 20°30'E], 20 km E Rooidag gate, 1 ♀, 8.iv.1970, W. D. H. [= W. D. Haacke] (TMSA). SOUTH AFRICA: 'S. Africa', 1 ♀, Dr Quain (BMNH 70.26). **Cape:** Addo Bush, 1♂, vii.1919, J. Drury (SAMC B4662); Adelaide, Commandsfontein, 1 ♀, 1900, E. Stevenson (SAMC 7794); Alicedale, 1♂2♀ (AMGS 1884, 1909, 2193); Ashton [33°50'S 20°04'E], 1 ♀, xi.1919, R. W. Tucker (SAMC B4800); Bedford, 1 ♀ (AMGS 2236); Bonnivale [?Bonnievale 33°56'S 20°05'E, 120 km E. Cape Town], 1 ♀, vi.1991 (SAMC C2282, Collector's No. 192); Cape Peninsula: Devil's Peak area, 1 ♀, 7.ii.1983, Mr Kalin (SAMC C1056), Newlands Forest, 1♂, 18.v.1991, N. Larsen, no. 164, (SAMC C2081); Cape Town: 1♂1 ♀, 1973, P. L. G. Benoit (MRAC 144.728), Table View, 1 ♀, 12.vi.1983, N. McConnell (SAMC C1058); Dunbrody, 54km N. Port Elizabeth, 1♂1 ♀, 1903, Rev O'Neil (SAMC 13052 [? & 8299]); East London: 1 ♀, Power (SAMC), 1 ♀, 1899, Rev O'Neil (SAMC 5296), 1♂ (MNHN 18.523), 2♂6♀ 4subad.♂ 3juv., ix.1914, R. Ellenberger (MNHN), 1♂1 ♀ (AMGS 2793), 1 ♀ (AMGS 2785); Fort Brown, Resolution, 3♂, 11.xii.1925 & 12.iii.1930, Miss Walton (AMGS 5197, 6257); George, Pacaltsdorp: 4♂4♀ 1subad.♂ 1subad.♀ 5imm., 1899, Miss Leipoldt (SAMC 5123), 1♂ 3♀ (SAMC 8446); George distr., 1 ♀ 1subad.♀ (SAMC); Grahamstown: 2♀, vi.1895, W. Frick (BMNH 99.7.24.64-65), 2♀ 1♂ 1subad.♂, [24.vii.1899] (BMNH 99.7.24.66-71), 1♂ (det. *Palystes natalius* Kar. by Pocock, 1900) (AMGS), 1 ♀ 2♂ 5juv., [5.iii.1901], Schonland (BMNH 01.3.5.57-59), 1♂1 ♀, 18.iv.1906 & 26.x.1908, Prof Schwartz (AMGS 207, 690), 1 ♀, 7.iv.1906, Miss A. Daly (AMGS 200), 3♀, 7.xii.1907, 15.vii.1909, 30.xii.1909, Miss M. Pinnock (AMGS 543, 806, 867), 2♀, 6.ii.1908 & 26.iii.1909, Mr H. Babbs (AMGS 571, 769), 1 ♀, 25.iii.1907, Master Weinick (AMGS 409), 1 ♀, 8.viii.1907, Master McLeod (AMGS 482), 2♂1 ♀, vii.1905, vii.1907, Miss E. M. Cherry (AMGS), 1 ♀, 19.iii.1906, Master J. Cherry (AMGS 174), 2♀, i.1967 (AMGS), 1♂ (AMGS 1322), 1♂, 10.xi.1905, Mrs J. E. Duerden (AMGS), 1♂ (AMGS 1335), 1 ♀ (AMGS 1013), 1♂, 31.viii.1908 (AMGS 666), 1♂, 15.ix.1909, Miss F. Bessinger (AMGS 835), 1 ♀, (AMGS 1348), 1♂, 2.iv.1906 (AMGS 194), 1♂, 22.x.1908, Mr A. J. W. Daly (AMGS 688), 1♂, 19.xi.1908, Miss A. Daly (AMGS 700), 1♂, 31.iii.1981, P. M. C. Croeser (NMSA), Brak Kloof, 4♀ 2♂ 1imm.♀, Mrs White (BMNH), 1subad.♀, 10.ii.1979, Shirleen Gilbert (NMSA), Keilands, 1♂2♀ (AMGS 2037), Newington, 1♂ (AMGS 1644), Newington, 1♂ (AMGS 1567), Oatlands, 1 ♀, 7.i.1986, B. Londt (NMSA), Penrock, 1 ♀ (AMGS 6363), Resolution Halt, 1 ♀, xii.1929, A. Walton (SAMC B7648), Sidbury, 1♂ (AMGS 2653), Slaaikraal Farm, 1 ♀, 24.iii.1979, P. M. C. Croeser (NMSA), Tea Fountain, 1 ♀ 1♂ 4juv., [13.iii.1901], Miss Leppan (BMNH 01.3.13.260-266), Trapp's Valley, 1♂ (AMGS 2128), 1♂, 24.ii.1979, P. M. C. Croeser (NMSA); Heidelberg, Grootvadersbosch For. Res., 1♂, xi.1985, J. Doyen (NMSA);

Hogsback Forest Reserve, 32°36'S 26°56'E, 3 ♀, 12–16.xii.1985, B. Londt (NMSA); Humansdorp, Coldstream, 1♂, 1921, Tucker (SAMC B5-678); Jansenville: 1♂, Miss Leppan (BMNH), 3♂, x.1900, Mr P. M. Dancel (BMNH 01.3.5.55-56); Jonkersberg [33°55'S 22°14'E, S. Oudtshoorn], 1♂ 6♀ (TMSA); Kimberley, 2subad.♂ 2♀ (SAMC); King William's Town: 2♀ (BMNH 76.70), 2♀, 1892, H. A. Spencer (BMNH 1892.12.4.13-14), Pirie Bush, 1♂2♀, [12.x.1898], A. N. Stenning (BMNH 98.10.12.20-22), Pirie Bush, 5♀, [10.x.1900], A. N. Stenning (BMNH 0.10.10.3-7), Pirie Mission, 1♀, 1909, R. Godfrey (SAMC B93), urban area, 1♀, i.1973, P. Swanepoel (PPRI '76/1128); Klein Winterhoekberg, Perdepoort, 3325Ac, 1♂, 10.vii.1980, W. R. Branch (NMSA 13748); Knysna: 1♀, 21.v.1912, J. H. Rex (TMSA 1106), 1♂, 21.v.1915, J. H. Rex (TMSA 13384 old 2143), 1♀ (AMGS 1218), Diepwalle Forest, 1♀, xi.1985, T. & C. Griswold & J. Doyen (NMSA), Newdigate [?loc. or coll.], 1♀ (SAMC), Knysna Forest, 1♂, i.1911, Mrs Rex (NMSA 2102), Knysna Forest, 1♀, I. Bainbridge (SAMC 872.197), Rheenendahl, Goudveld Forest Reserve, 1♀, 3.i.1981, P. M. C. Croeser (AMGS), The Wilderness, 1♂, viii.1963, J. S. Taylor (NMSA 8845); Mosselbay: 4♀, i–ii.1919, J. Power (SAMC B4593), 2♀ (SAMC 3185), 2♀, Coster (SAMC); Pearston: 1♂, [5.iii.1901], Dr Broom (BMNH 01.3.5.18), 2♀, 27.ix.1927, B. Marais (AMGS 5679); Port Alfred, 1♂, 29.iv.1979, R. A. Jubb (NMSA); Port Elizabeth: [1890], 2♀ imm., H. A. Spencer (BMNH 90.12.15.31-33), 1♀, L. Drege (BMNH), 1♀ 1♂ imm.♀ (MNH 6.382), 1♂1♀, xi.1897 & 1898, J. Drege (SAMC 2149, 3729), 2♀ (AMGS 2936, 1534), Dunbrody, 3♂1♀, 1903, Rev. O'Neil (SAMC 13052), Dunbrody, 1♀ (AMGS 2951), Dunbrody, 1♂, 5.xii.1925, Rev. K. Tasman (AMGS 5193), Dunbrody, Blue Cliff, 1♀ (AMGS 1894), Bluecliff, 1♀, 17.xii.1899, J. L. Drege (SAMC 5709), Redhouse, 4♂, iii.1915, Mr Paterson (SAMC B1128, B3884, B4650), Sardinia Bay, Sardinia Downs Farm, 1♀, 16.ii.1981, W. R. Branch (NMSA), Zwartkops valley, 1♀, v.1910, Miss D. Laffan (NMSA 2097); Riversdale distr., 34°10'S 21°20'E, [85 km W. Mossel Bay], 1♂, 1919, H. Hermann (SAMC B2320); Riversdale, 1♀, 1909, H. Hermann (SAMC B2321); [?Riviersonderend], 3♀ 2♂, ix.1933, R. F. Lawrence (SAMC 8444); Somerset East district, Zuurburg, 2♂, 7.ix.1969, A. E. Deacon (AMGS); Storms River Mouth, 1♀, ii.1966, A. L. Capener (NMSA 9535); Stutterheim, Amatola mountains: Evelyn Valley Forest, 1400 m, 1♀, 25.vii.1985, P. M. C. Croeser & A. C. Duckworth (NMSA), Isidenge State Forest, 1♀, 25.vii.1985, 1♀, 24.vii.1985, P. M. C. Croeser & A. C. Duckworth (NMSA), Isidenge State Forest, 1♂, 18.ix.1985, Mrs T. Kröger (NMSA); Worcester, 1♀ (AMGS 2074). **Transkei:** Dwesa Coastal Forest, 3♂, v.1984, R. Kilburn (NMSA); Dweza, 1♀, 20.xi.1991, D. A. Barraclough (NMSA); Kentani: 1♀, xi.1909, Miss Pegler (SAMCB512), 1♂, 1914, H. P. Abernethy (SAMC B50), 2♂1♀ imm., 1904, Pyler (SAMC 13660), 1♀ (AMGS 1904); Kentani district, 1♀, 1899, 1♀, 1902, Dr F. Kolbe (SAMC 4544 & 12461); Lusikisiki distr., Mzimhlava River mouth, 6♀ 1♂ 1subad.♀, i.1980, 19♀ 3♂, ii.1980, M. Baddeley (MRAC 163.213, 166.705); Mbotyi, coastal grassland, 1♀, v.1985, D. Herbert & R. N. Kilburn (NMSA); Mgazana Mouth, 1♂, 8.xii.1975, J. R. Grindley (NMSA); Ngqeleni, 2♂1♀ (AMGS 2289, 2413); Ntabanana, 3& (AMGS 4603); Port St Johns: 1♂, vii.1945, R. F. Lawrence (NMSA 4564), 2♂6♀ 2subad.♀, 1907, G. Shortridge (SAMC 9924), 1♂,

13.iv.1958, E. S. Ross & R. E. Leech (CASC), 1 ♀, 1902, Shortridge (SAMC 13063); Umtata, 1 ♀, vii.1961, M. Courtney-Latimer (NMSA 8093). **Natal:** Natal, 3 ♀, c.m. [?C. Martin] (MNHN 18.468); Natal, 9♂9♀ 6juv., C. Martin (MNHN 19.745); 2 ♀, Abrahams (NMSA 2105); 2 ♀, [22.iii.1889], E. Howlett (BMNH 89.3.22.3-4); 1 ♀ 2imm., G. F. Leigh (BMNH); Drakensberg Mountains, pine forest SE. Champagne Castle Hotel, 1♂, 20.i.1991, B. & V. Roth (NMSA); Drakensberg Mountains, Cathedral Peak Forestry Station, 1360 m, 1 ♀, 29.iii.1990, I. Pajor (NMSA); Drummond, 1 ♀, 24.iv.1985, June Roos (NMSA); Durban: 7♂6♂ 2imm., H. A. Spencer (BMNH), 1 ♀, [1912], E. C. Chubb (BMNH 12.3.4.15), 6♀ 3♂, [14.vii.1903], J. P. Cregoe (BMNH 03-7-14.38-40), 2 ♀ 1♂ 9imm., 10.vii.1903 L. F. Leigh (BMNH 10.VII.03), coastal dune scrub, 1 subad. ♀, 17.iv.1976, F. Wanless & A. Russell Smith (BMNH 17.4.76), Bluff, 1 ♀, 'Spring 1976', Fred [?Wanless] (BMNH), 1 ♀, 7.viii.1972, F. L. Farquharson (NMSA), 1 ♀, x.1970, M. L. Jarvel (NMSA 9840), 1 subad. ♀, 2.v.1968, Mrs Demont (NMSA), 1 ♀, 18.i.1984, J. Visser No. 2837 (NMSA), Hillary, 1 ♀, 19.xii.1918, F. Ducasse (NMSA 12272), Marine Parade, 1 ♀, 30.iii.1983, R. Pewtress (NMSA); Estcourt: 2♂4♂ 1 subad. ♂ 1 subad. ♀, G. Marshall (BMNH), 1♂, [5.iii.1907], Mrs E. J. Turner (BMNH 07.3.5.3-14[part]), G. Marshall (BMNH 96.4.20.16-19), 2♂1♂ 1 subad. ♀, G. Marshall (BMNH 96.4.20.16-19); Hilton: 1♂, iv.1986, J. & R. Enders (NMSA), World's View, 1 ♀, 24.ii.1986, J. Londt (NMSA); Howick, 29°28'S 30°14'E, 2♂ 1juv., 20-30.iii.1983, Mrs J. G. Joubert (NMSA); Kokstad, 2 ♀ (AMGS 2618, 2382); 39 mi N. Kranskop, Ekombe For., 1520 m, 1♂, 10.iv.1958, E. S. Ross & R. E. Leech (CASC); Krantzklouf, 1♂, 7.v.[1913], Bell-Marley (SAMC B1306); Lidgetton, 29°26'S 30°06'E, 40 km NE. Pietermaritzburg, 1 ♀, iii.1985, G. Timms (NMSA); Lower Umkomaas River: 1♂1♂, [4.xi.1897], G. Marshall (BMNH 97.11.4.16-17), 5♂ 3juv., [20.vii.1903], G. F. Leigh (BMNH 03.7.20.58-65 [part]); Lüneburg [27°19'S 30°37'E, 40 km SW. Piet Retief], 2 ♀ (AMGS 1694 & 2019); Marina Beach [30°56'S 30°18'E], 1 ♀, xii.1985, R. Douglas (BMSA NMBA1362); Merrivale, TshwalaBenyoni farm (25 km NNW. Pietermaritzburg), 1 ♀, 13.v.1983, 1♂, 2.v.1984, B. R. Stuckenberg (NMSA); 10 km SE. Muden, Mhlopheni Nature Reserve, 29°02'S 30°21'E, 1 ♀, 8.iv.1983, P. M. C. Croeser, B. Londt & W. Cadman (NMSA); nr Pennington, 30°15'S 30°45'E, 1 ♀, 11.ii.1979, J. Hardman (NMBZ A1510); 70 km NE. Pietermaritzburg, side of road between Greytown and Kranskop, 1%, 12.iii.1982, R. Pewtress (NMSA); Pietermaritzburg: 1 ♀ & spiderlings, iv.1913, Burnup (NMSA 1914), 1 ♀, iii.1914, Burnup (NMSA 1686), 1♂, viii.1913, McKellar (NMSA 1938), 1♂, 1923 (NMSA 948), 1 ♀, 21.ix.1967, Gay Bendemann (NMSA 9591), 1♂, 22.x.1969, P. Lamoral (NMSA 12438), 2 ♀, 1.x.1979, B. Lamoral (NMSA 12803), 1♂, 20.iv.1979 (NMSA 12202), 1 ♀ (NMSA 2098), 1♂, 15.v.1982, A. J. Wilby (NMSA), 1♂, 20.iv.1983, B. Londt (NMSA), 1♂, 12.viii.1984, B. H. Lamoral (NMSA), 1 ♀, xii.1984, B. Last (NMSA), 1♂, v.1985, P. M. C. Croeser (NMSA), 1 ♀, 15.ix.1985, B. van Hoogdalem (NMSA), 1 ♀, ix.1985, P. M. C. Croeser (NMSA), 1♂, 25.v.1986, B. van der Merwe (NMSA), Ashburton, 1♂, 20.ix.1981, Dept of Entomology, University of Natal (NMSA), 1 ♀, 21.v.1984, Elna Venter (NMSA), Athlone, 1♂, 18.iv.1985, D. Barraclough (NMSA), Clarendon, 1♂, 30.v.1983, R. S. Brooking (NMSA), Grange, 1♂, 2.v.1985, C. R. Hurt (NMSA),

Lincoln Meade, 1♂, 19.i.1983, S. R. Gray (NMSA 14167), Mkondeni, 1♂, 7.x.1969, P. F. Tempest (NMSA 12446), Montrose, 1♀, viii.1985 (NMSA), 1♂, 14.xi.1985, J. Londt (NMSA), Pelham, 1♀, 6.viii.1990, R. B. Graham (NMSA), Prestbury, 1♂, 15.v.1983, 1♀, vi.1983, 1♀, 6.vi.1984, 1♀, 2.viii.1985, P. M. C. Croeser (NMSA), Prestbury, 1♂, 7.xii.1987, W. Starega (NMSA), Scottsville, 1♀, 18.i.1970, 1♂1♀, i.1973, B. Lamoral, 1subad.♂ 2♀, xi–xii.1970, B. Joubert, 1♀, 23.iii.1983, P. Croeser & R. Kilburn, 1♂, 26.vi.1984, R. Kilburn, 1♀, 5.x.1983, Miss K. Herbert, 1♂, 10.vi.1983, R. du Toit, 1♀, 4.x.1986, S. Duff, 1♀, 20.vii.1984, J. Kilburn (NMSA), Shortt's Retreat, 1♀, 4.i.1984, D. M. Ward (NMSA), Town Bush, D.S.G.'s grave, 1♀, 15.x.1983, P. Croeser & C. Griswold (NMSA), Town Hill, 1♀, 20.iii.1983, 1♂, 21.ii.1983, 1♀ & spiderlings, 17.i.1984, 1♀, 12.x.1985, 1♀, vi.1987, P. F. Tempest (NMSA), Winterskloof, 1♂, vii.1985, B. Last, 1♂, 27.vi.1985, B. Last (NMSA), 15 km NE. Pietermaritzburg, Lothlorien Farm, 1♂, 18.v.1983, R. S. A. du Toit (NMSA), University of Natal, Faculty of Agriculture, 1♂, 8.x.1980, P. Govender, 1♂, 6.x.1981, D. York (NMSA); Pinetown, 1♀, x.1896, J. P. Cregoe (SAMC 972.197); Port Edward: 1♂, 26.iii.1983, 1♂, vii.1984, 1♀, ix.1984, 1♀, ix.1984, 1♂, caravan park, Umtamvuna River, xi.1984, 1♂, xii.1984, 3♂ 1subad.♂ 1subad.♀, iv.1985, 1♀, vii.1985, 1♀, viii.1985, 1♂, x.1985, 1♀ 1juv., xi.1985, 2♂1♀, xii.1985, 1♂1♀, i.1986, 1♂, ii.1986, 1♂1♀, v.1986, 1♀, vii.1986, 1♀, x.1986, 1♂, x.1986, 1♀, i.1988, 1♀, [no date], June Stannard (NMSA); Port Edward, Blencathra Farm, 31°02'S 30°10'E, 5 km W. Port Edward, 335 m: 1♀, 1♂, 5.iv.1983, 1♀, 7.iv.1983, 1♂, 26.v.1983, 1♀, 12.vi.1983, 1♀, 17.iv.1983, 1♂, 25.iv.1983, 1♂, i.v.1983, 1♂, 19.v.1983, 1♂, 25.v.1983, 1♂, 15.vi.1983, 1♂, vii.1983, 1♀, 9.vii.1983, 1♀, ix.1983, 1♀, x.1983, 1♀, x.1983, 1♀, with egg sac & spiderlings in old hollow cane, 18.x.1983, 1♀, with leaf nest, spiderlings and second egg sac, 25.x.1983, 1♂, x.1983, 1♀, xi.1983, 1♀, olive-coloured, i.1984, 1♂, at night, same room as ♂ *Palystes perornatus*, iv.1984, 4♂1♀, iv.1984, 2♂1♀, vi.1984, 2♂, vii.1984, 1♂1♀, 20.v.1985, 1♀, vi.1985, 1♂, [no date], June Stannard (NMSA); Port Edward, M. Walker's farm, 4 km NW. Port Edward: 1♂, 11.v.1983, 1♀ 17.v.1983, 1♂, 5.vi.1983, 1♀, 5.vi.1983, 1♀, viii.1983, 1♀, viii.1983, June Stannard (NMSA); Umvoti River Mouth, 1♂, i.1986, J. Stannard (NMSA); Richmond, 4♀, 1899, Rev. Ward (SAMC 5338); Rietvlei distr., Blackheath Farm, 35 km from Greytown on Rd to Mooi River, 2♂1♀, 16.ii.1983, Mrs F. Roos (NMSA 14166 & 14169); Salt Rock, 29°29'S 31°14'E, Sheffield Beach, 1♀, 26.xii.1985, A. C. Duckworth (NMSA); Shafton House, 1♂1♀, iv.1921, R. E. Simons (SAMC B5689); Umgababa, 30°08'S 30°50'E, 1♂, xi.1939, J. Kent (NMSA 12197); Umhlanga Rocks [29°43'S 31°05'E], 1♀, 13.i.1983, F. Reardon (NMSA 14180); Weenen, 1♂1♀ (AMGS 3005); Weenen, Tugela Estates, 1♀, 8.x.1925, G. v. Dam (TMSA 6117); Tugela Estates, 2500 ft, 1♀, 8.x.1925, R. E. Symons (TMSA 6116); Winkelspruit [= Winklespruit, 30°06'S 30°51'E], 1♂1♀, v.1917, C. Akerman (NMSA 1933, 1932). **Natal (Zululand):** 1♂2♀ 1subad.♂ 2juv., J. C. Martin (MNHN 19.537); Blythedale Beach [near Stanger], 1♂ 2subad.♂ 1subad.♀, 8.i.1980, P. Reavell (NMSA 13149); Charters Creek, Lake St Lucia, 29°12'S 32°26'E: 1♂, 19–20.xi.1985, C. & T. Griswold, J. Doyen (NMSA), 1♀, iv.1984, R. van der Elst (NMSA); Dukuduku [28°22'S 32°13'E], 1♀ 2subad.♀, viii.1905, Toppin (NMSA

2104); Empangeni [28°45'S 31°54'E]: 1♂1♀, xii.1977, P. E. Reavell (NMSA 12763), 1♂, 29.ii.1984, P. E. Reavell (NMSA), 1♂, 18.xi.1983 (SAMC C1882), 1♂, 16.i.1984, P. M. C. Croeser (NMSA), University of Zululand, 1♀, P. E. Reavell (NMSA 12116), 1♀, 8.ii.1985, 1♀, 30.viii.1985, P. E. Reavell (NMSA); Nyala Game Ranch, 22 km NW. Empangeni, 1♀, 27.vi.1983, B. Londt (NMSA); Ingwavuma [27°08'S 32°01'E], 3♂3♀, viii.1933, A. Roberts (TMSA 6485-6486); Kosi Bay [26°57'S 35°20'E]: 1♀, xii.1905, Toppin (NMSA 2101), Kosi Bay, KBNR campsite beside Lake Nhlanga, 1♀, 29.x.1989, D. G. Herbert (NMSA), Makowe via Somkele, 1♂, [4.iii.1912], E. C. Chubb (BMNH 12.3.4.14), Mapula, 1♂, vii.1936, R. F. Lawrence (NMSA 162); Mseleni, 1♀, x.1905, Toppin (NMSA 1696); Sodwana State Forest, 27°35'S 32°37'E, KwaMbilu, 1♀, 25.vii.1984, A. C. Duckworth (NMSA); Sodwana Bay, 1♂, 19.v.1981, C. A. Car (SAMC C273); Somkele, [28°18'S 32°10'E], 1♂1♀, 1914, J. Hawkins & A. Loveridge (MCZC); Somkele [?Somkele], 1♂ (MCZC); St Lucia Estuary, 1♀, 4-6.xii.1966, J. G. Rozen & D. J. Brothers (AMNH). **Orange Free State:** Bloemfontein, 1♀, E. Reimoser (MCZC). **Transvaal:** 2♀ 2subad.♂ 3subad.♀ 1juv.♀, Sammlung Reimoser (NHMV); 1♂, ix.1983, J. Stannard (NMSA); Acornhoek [24°36'S 31°04'E], 2♀, xii.1918 [?1919], R. W. E. Tucker (SAMC B4517 & B4522); Badplaats Post Office, via Carolina, 1♀, 3.xii.1932, S. Grobler (TMSA 5305); Barberton: 25°47'S 31°02'E, 1♂, x.1922, G. van Dam (TMSA 13363 old 864), 1♂, vii.1910, 1 subad.♀ 1juv., v.1910, 1subad.♀, vii.1910, Miss de Beer (TMSA 13734 old 1146, 13735 old 1276, 13754 old 2446, 13731 old 1143), 1♂, 25.v.1923, L. C. de Beer (TMSA 14761 old 1914), Barberton, 1♂, 1898, Dr Kolbe (SAMC 3738), Princetown Hill, above Agnes Mine, 1♀, 8.v.1943, D. H. Bowden (TMSA 8649), Nelshoogte, Eastern Transvaal Timber Co. Plantation, 2♂1♀, 12.vi.1979, M. Stiller (PPRI '80/182, '80/192, '80/177); [Brits], De Kroon, Crocodile River, 1♀, 26.xii.1910, 2♀, 25.iv.1911, G. P. F. van Dam (TMSA 1103-1105); Carolina distr, Nelsberg, 1♀, 25.v.1914, A. Roberts (TMSA 1127); Cullinan, Premier Mine, 1♀, 28.viii.1931, D. Uys (TMSA 5176); Haenertsburg, 23°55'S 29°57'E, Merrick farm, 1♀, (coll. 10.xii, egg case 14.xii, eggs hatched 29.xii), 10.xii.1977, P. M. C. Croeser (NMSA); Haenertsburg, Clearwaters Farm, 1♀ 3♂, 4.ii.1916, Mrs C. Thompson (TMSA 1113-1116); Johannesburg: 2♂2♀, vi-vii.1987, 2♂1♀, vii.1987, 1♀, ii.1988, M. Filmer (NMSA), 1♀, 13.v.1965, Zoology Dept, University of the Witwatersrand, No X.33.(AMGS), Bryanston, 1♂ with egg sac, vii.1987, M. Filmer (NMSA), Parktown North, 1♂, x.1987, Jacob, 1♀, xii.1987, M. Filmer (NMSA), Randburg, 1♀ 1♂, xii.1985, A. LeRoy (NMSA), Sandton, 1♂, xi.1983, P. Croeser (NMSA), [Johannesburg] Zoo grounds, 1♂, vi.1984 [?preserved 31.xii.1986], J. Cowan (PPRI '87/44); Kaapmuiden, Althorpe farm, 1♂, 15.iv.1979, M. Stiller (PPRI '80/206); Kruger National Park, Skukuza, 1♀, 16.ix.1984, L. Braack (NMSA); near Lebombo Mountains, Sabie & Sand rivers, 1♂1♀, 1898, H. Fry (SAMC 4220, 4219); Louis Trichardt, 1♂, 28.ii.1923, Dr H. C. Breyer (TMSA 1005); 35 mls E. Louis Trichardt, Tshakoma, 1♀, xi.1931, G. van Son (TMSA 5187); Lydenburg, 1♀, Flygare (TMSA 13774, old 2417); Lydenburg: 1♀, 1895 (TMSA 13777 old 1158), 1♂, 1.vi.1911, H. J. Gurr (TMSA 1107); Nelspruit, Rietspruit, 1♂, 5.vi.1916, A. Roberts (TMSA 13369 old 2197); Nylstroom, Waterberg dist.: 1♀, xii.1915, G. P. F. van

Dam (TMSA 1160), 1 ♀, xii.1923, v. Dam (TMSA 13069 old 2827); Onderstepoort [near Pretoria], 1 ♂, 14.x.1986, N. Smit (PPRI '86/415); Pienaars River, on Great North Road, 1 ♀, vi.1971, G. de Beer (TMSA 10128); Pietersburg: 1 ♀, 20.xi.1916, L. Beacom (TMSA 12926 old 1801), 1 ♀, [5.v.1889], C. R. Jones (BMNH 89.5.5.4), 1 ♂, xi.1984 (NMSA); Pietersburg district, 1 ♂, Miss Czerikow (TMSA 1128); 20 mls E. Pietersburg, 2 ♀, 1899, Rev Daniel (SAMC 5340); Pietersburg, Smitsdrift, 1 ♀ 1subad.♂, Miss Moller (AMGS); Piet Retief, 1 ♀ 1subad.♀, xii.1976, L. Klingenberg (PPRI '77/791); Potgietersrus: 1 ♀, 23.i.1920, H. B. Pretorius (TMSA 1778), 1 ♂, x.1919, Dr Melle (SAMC B4731), 1 ♂ 1subad.♀, iv.1934, R. F. Lawrence (SAMC B8468); Pretoria: 1 ♀, 13.i.1987 (PPRI '87/42), 1 ♀, 20.iii.1897, A. Smith (TMSA 1122), 1 ♀, 23.vi.1906 (TMSA 1080), 1 ♂, 8.xi.1906 (TMSA 1081), 1 ♀, viii.1908, G. P. F. van Dam (TMSA 1119), 1 ♀, vii.1908, G. P. F. van Dam (TMSA 1120), 1 ♂, viii.1908, G. P. F. van Dam (TMSA 1121), 1 ♀, vii.1909 (TMSA 1112), 2 ♀ 1 ♂, x.1909, R. M. Lurcock, (TMSA 1074-76), 1 ♀, 9.iii.1911, Rev N. Roberts (TMSA 1099), 1 ♂, 3.vii.1911, Mr Rose (TMSA 1101), 1 ♀, 19.viii.1911, Dr Gunning (TMSA 1095), 1 ♀, 9.iii.1911, Rev N. Roberts (TMSA 1100), 1 ♀, v.1912, G. P. F. van Dam (TMSA 1098), 1 ♀, 13.ix.1912, N. v. Tinteren (TMSA 1102), 1 ♂, 8.v.1912, I. P. Jenkins (TMSA 1125), 1 ♀, 9.v.1912, H. Brownfield (TMSA 1124), 1subad.♂, 11.xi.1913, Miss Barratt (TMSA 13130 old 2315), 1 ♂ (TMSA 4995), 1 ♀ (TMSA 4998), 1 ♂ (TMSA 4999), 1 ♀, 15.xi.1921, Mr Jorrison (TMSA 13132 old 1961), 1 ♀ (TMSA 5209), 1 ♀, 11.ix.1928, A. G. White (TMSA 6152), 1 ♂, iv.1936, N. von Wulff (TMSA 7465), 1 ♀, v.1941 (TMSA 8300), 1 ♀, x.1943, B. Dick (TMSA 8653), 1 ♂, xii.1947, A. Obermeyer (TMSA 8687), 1 ♂, ix.1956, 1 ♂, x.1956, 1 ♂, 21.iii.1960, T. A. P. de Beer (TMSA), 1 ♂ limm., 1.ix.1965 [?x.1949] (AMGS), 1 ♀, 4.xii.1969, G. Newlands (TMSA 9493), 1 ♀, 11.i.1972, F. Barrington (TMSA 10318), 1subad.♀, 14.v.1916 [?1976], D. Gunn (PPRI '76/1046), 1 ♂, 14.x.1978, M. Grobler (PPRI '86/410), 1 ♂, 18.x.1978, Mr Fourie (PPRI '79/273), 1 ♀, 16.viii.1979, R. Kfir (PPRI '80/200), 1 ♀, 18.xi.1979, H. van Ark (PPRI '81/611), 1 ♀, 21.xi.1979, M. A. van den Berg (PPRI '81/618), 1 ♀, x.1980, H. van Ark (PPRI '81/581), 1subad.♀, iv.1981, G. van der Linde (PPRI '82/338), 1 ♂, 20.iii.1983, Mrs Papadopolis (PPRI '83/195), 1 ♀, 3.v.1984, C. Eardley (PPRI '84/454), 1 ♀, i.1985, A. le Roy (NMSA), 1 ♂, 5.x.1985, E. J. Wright (NMSA), 1 ♂, 16.ix.1986, L. Vrey (PPRI '86/409), 1 ♀, 17.ix.1987, E. S. Prentice (PPRI '87/840), 1 ♂, 1.x.1987, L. Oosthuizen (PPRI '87/839), Brooklyn, 1 ♂ 1 ♀, 28.ix.1977, Mrs Harmse, (PPRI '78/123), Faerie Glen, 1 ♂, 11.viii.1979, I. Grobler (PPRI '80/209), Faerie Glen, 2 ♂, x.1984, Boeta Fourie (NMSA), Fountain Grove, 1 ♀, 19.iii.1901 (TMSA 1077); Pretoria, Gezina: 1 ♀, Rev Roberts (TMSA 13143 old 2270), 1 ♀, Rev Roberts (TMSA 13145 old 2272), 1 ♂, Rev Roberts (TMSA 13146 old 2273), 1 ♀, 13.iv.1915, Dr van Hoepen (TMSA 1202), 1 ♀, 5.vi.1930, C. J. Fourie (TMSA 4996); Pretoria, Groenkloof, 2 ♀, xi.1973, E. de Ridder (TMSA 10815), Hazelkwist, 5 ♂ 2 ♀ 1 juv.♀ 1subad.♀, xii.1949 (NMSA), Landbougebou, 1 ♂, 24.ix.1985, S. Naser (PPRI '86/501), 1 ♂, 11.ix.1985, D. du Preez (PPRI '86/498), Mayville, 1 ♂, 9.x.1934, Wolswinkel (TMSA 7358), 1 ♂, 3.iii.1976, L. Harley (PPRI '76/957), Pretoria North, 1 ♀, iii.1942 (TMSA 8614), Roodeplaat Dam, 1 ♂, 15.x.1985, P. Giller (NMSA), Union Buildings, 1 ♂, 20.ix.1976, S. Stiemie (PPRI '76/1522),

Villieria, 1♂, 8.xi.1976, M. Zwiegelaar (PPRI '76/1931), 1♀, xi.1977, Mrs J. F. Smit (PPRI '77/1067), 1♂, 2.v.1979, Mrs Smit (PPRI '80/195), Wonderboom-Suid, 1♂, 1974, A. S. D. [A. S. Dippenaar-Schoeman] (PPRI '77/753); Rustenburg, Zandfontein, 1♂, 25.vi.1914, G. P. F. van Dam (TMSA 1123); Standerton, 1♀ (TMSA 7402); Sulphur Springs [probably 20 km SSE. Piet Retief], 1♀, 10.iv.1907, S. C. Heymans (TMSA 1073); Tshipise, 1♀, 5.v.1986, S. Kamburov (PPRI '86/500); Verwoerdburg, 18 km SE. Pretoria, Eldoraigue, 1♀, 27.vi.1973, J. Church (TMSA); Waterberg, Vyeboompoort, 1♂, 13.x.1913, C. Truter (TMSA 13353 old 2316); Waterpoort, 1♀, 20.x.1932, Maj Bronkhorst (TMSA 5279); Zebediela, 1♂, 14.vii.1958, 1♀, 10.x.1958, R. B. Copley (TMSA); Zoutpansberg, 1♂, [14.vii.1903], J. P. Cregoe (BMNH 03.7.14.103); Zoutpansberg district, Shilowane, 1♀, i.1910, Rev Junod Maphophe (TMSA 1094). SWAZILAND: [?], Halibura, 1♀, xii.1918, Watermeyer (SAMC B4231); Henwood's Halt, 3♂, v.1939, C. Major (SAMC 9842); Mhlume, NE Swaziland, Mbuluzi Game Reserve, 1♂, 10.v.1986, A. LeRoy (NMSA); Piggs Peak, 1♂ 1imm.♀, 17.vi.1916, A. Roberts (TMSA 13418 old 2195).

Palystes ellioti Pocock, 1896

Figs 81–88, 109

Palystes ellioti Pocock, 1896: 58, Pl.VIII, Figs 2, 2a. Syntypes: 3 adult ♀ [adult ♀ with pin, here designated as lectotype, remaining specimens designated paralectotypes], 'Uganda', G. F. Scott Elliot (BMNH). [examined].

Palystes amanicus Strand, 1907a: 541 [amplified in Strand 1907b: 680]. Holotype: subadult ♂, 'Amani' [Usambara Mtns, Tanzania] (ZMHB – Strand – not confirmed) [not examined] **Syn. n.**

Palystes affinis Lessert, 1921: 396, Text Fig. 16, p. 395. Holotype: adult ♂, 'Usambara' [Tanzania] (body in NHRS) [examined]; (right pedipalp and bulb of left pedipalp in MHNG) [examined] **Syn. n.**

Remarks: Pocock (1896: 58) described the adult female of *P. ellioti* based on material collected by G. F. Scott Elliot. It is most likely that it was during Scott Elliot's Ruwenzori expedition that the syntypes of *P. ellioti* were collected. The majority of specimens I have determined as *P. ellioti* come from north and north-western Tanzania, south-western Uganda, Rwanda, Burundi and eastern Zaïre. When describing *P. ellioti*, Pocock did not specify how many specimens he saw, but in the absence of any other information the three females identified as types in BMNH obviously constitute a syntype series. I have designated the pinned female as lectotype and the other two females as paralectotypes.

Lessert (1921: 396) described *P. affinis* from a single adult male collected from the Usambara Mountains (eastern Tanzania) by Dr Y. Sjöstedt's 1905–1906 Swedish expedition. The adult male in NHRS, together with the right pedipalp and left pedipalp bulb in MHNG (NHRS records note that the missing pedipalp and bulb are in MHNG), agree in all respects, including label details, with Lessert's description, and I have accordingly determined the specimen as the holotype of *P. affinis*. I cannot differentiate the male holotype of *P. affinis* from males I have determined as *P. ellioti* from south-western Uganda, Rwanda–Burundi and eastern Zaïre, and I was not able to find any females in the various collections from the Usambara Mountains. On the basis of the specimens examined, I have recognised *P. affinis* as a junior synonym of *P. ellioti*.

Strand's (1907a, 1907b) description of *P. amanicus* is based on a subadult male

collected by Vosseler from Amani (Usambara Mountains), but agrees in all major respects with the description of *P. affinis* (holotype also from Usambara) and males associated with *P. ellioti*. Strand's description does not provide any information which would justify separating *P. amanicus* from *P. ellioti*. I have not been able to establish whether Strand's holotype is still in ZMHB where he recorded that it was originally deposited. As I have synonymised *P. affinis* with *P. ellioti*, and in the absence of any evidence to the contrary, I have also synonymised *P. amanicus* with *P. ellioti*.

Diagnosis: Abdomen ventrally with large dark brown blotches coalescing posterior to epigastric groove. Epigynum internally (Fig. 82) with sperm duct dorsal to collar and then forming a sclerotised structure on which spermathecae lie ventrally at posterior inner angle of support collar. Collar does not enfold spermathecae (as in *P. ansiedippenaarae* and *P. hoehneli*), nor do spermathecae lie dorsally on support collar (as in *P. superciliosus*). The embolus (Fig. 84) lacks dorsal and ventral flanges found in *P. johnstoni*, *P. hoehneli* and *P. ansiedippenaarae*, but is thicker and apically obtuse and recurved through less than 180° compared with *P. superciliosus*.

Distribution: Distributed from eastern Zaïre and Rwanda in the west, to south-western Uganda in the north, and across Tanzania to northern Malawi. Although no specimens from Burundi were seen, it doubtless occurs there as well.

Redescription of lectotype female of Palystes ellioti:

Specimen has a pin longitudinally through the cephalothorax and abdomen, and abdominal cuticle is ruptured dorsally.

Total length 27.51 mm.

Colour and markings: Abdomen with dorsal pulmonary marking, lateral undulating cream band with dorsal dark brown edge, ventral large dark brown blotches coalescing posterior to epigastric groove. Sternum with 3 transverse dark bands coalescing centrally, coxae with dark anterior margin and legs banded as in all other congeners.

Carapace: Dorsally 11.88 long, 9.0 wide between leg bases II. Head region 5.56 wide across PER; thoracic fovea straight-longitudinal, 2.25 long, occupying 0.19 X of CL and 0.25 X of CW. **Eyes:** Eye diameters: AME 0.52, ALE 0.66, PME 0.49, PLE 0.49; PER 3.56 wide, wider than AER by 1.21 X and occupying 0.64 X of HW and 0.40 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.26:0.94:0.94; distances separating eyes: AME-ALE 0.18, AME-AME 0.43, AME-PME 0.60, ALE-PLE 0.52, PME-PLE 0.65, PME-PME 0.65; MOQ dimensions: MOQA 1.38, MOQP 1.66, MOQL 1.42; MOQ 1.17 X wider than long, narrowed anteriorly, with MOQP 1.20 X wider than MOQA. **Chelicerae:** 5.06 long, 2.56 wide, 1.98 X longer than wide. **Sternum:** 4.38 long, 3.75 wide between coxae II, 1.17 X longer than wide and 3.44 X wide between coxae I. **Labium:** 1.94 wide, 1.29 long, 1.5 X wider than long, occupying 0.56 X of SW between coxae I. **Maxillae:** 2.98 long, 2.06 wide, 1.45 X longer than wide.

Abdomen: 15.63 long and 10.63 wide.

Epigynum: Internally with sperm duct dorsal to collar and then forming a sclerotised structure on which spermathecae lie ventrally at posterior inner angle of support collar.

Legs: Spination typical of genus. Tarsi of legs I and II missing on both sides.
Measurements:

	Palpus	I	II	III	IV
Femur	4.00	11.88	12.13	9.38	11.50
Patella	2.50	5.25	5.25	4.38	4.13
Tibia	3.00	11.63	11.63	9.00	9.63
Metatarsus	—	10.63	10.63	7.25	9.25
Tarsus	4.75	—	—	2.13	2.38
Total:	14.25	—	—	32.14	36.89

Redescription of holotype male of Palystes affinis:

Total length: 20.01 mm.

Colour and markings: As for female, but lateral abdominal marking not as distinct and without pale longitudinal band; ventral blotches smaller. Dark bars of sternum (Fig. 85) coalescing to cover much of sternum. In other males of *P. ellioti*, sternum markings (Figs 86, 87) range from that described above to 3 dark bands coalescing mesally, lateral abdominal markings range from form described here to those with lateral pale bands being more yellow than white. Ventral abdominal markings (Fig. 88) are also variable, ranging from spots to dark brown blotches posterior to dark post-epigynal bar.

Carapace: Dorsally 9.38 long, 7.00 wide between leg bases II. Head region 4.44 wide across PER; thoracic fovea 2.50 long, occupying 0.27 X of CL and 0.36 X of CW. **Eyes:** Eye diameters: AME 0.46, ALE 0.58, PME 0.43, PLE 0.45, PER 2.88 wide, wider than AER by 1.15 X and occupying 0.65 X of HW and 0.41 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.27:0.93:0.97; distances separating eyes: AME–ALE 0.11, AME–AME 0.34, AME–PME 0.62, ALE–PLE 0.62, PME–PLE 0.54, PME–PME 0.52; MOQ dimensions: MOQA 1.23, MOQP 1.38, MOQL 1.38, MOQ as long as wide; narrowed anteriorly, with MOQP 1.12 X wider than MOQA; clypeus 0.38 high, 0.83 X diameter of AME. **Chelicerae:** 4.00 long, 2.06 wide, 1.94 X longer than wide. **Sternum:** 3.75 long, 3.31 wide between coxae II, 1.13 X longer than wide and 2.50 wide between coxae I. **Labium:** 1.63 wide, 1.14 long, 1.43 X wider than long, occupying 0.65 X of SW between coxae I. **Maxillae:** 2.68 long, 1.63 wide, 1.64 X longer than wide.

Abdomen: 10.63 long and 6.0 wide.

Pedipalp: Embolus (Fig. 84) similar in shape to that of *P. superciliosus*, both species lacking apical, lateral lamellate carinations found in other species of this group. Distally, embolus wide, flattened, and terminating in a blunt point, less reflexed than embolus of *P. superciliosus*, in which it narrows distally and attenuates to needle thinness.

Legs: Spines typical of genus, but femora IV(3:2:2). Lessert's type is missing left legs II+III as well as metatarsus and tarsus of legs I+II and tarsus of leg IV on both sides. Measurements (based on remainder of legs):

	Palpus	I	II	III	IV
Femur	4.13	11.88	12.25	9.38	11.88
Patella	1.50	4.50	4.00	3.50	3.50
Tibia	2.25	11.25	11.50	8.50	9.38
Metatarsus	—	—	—	7.13	8.63
Tarsus	3.88	—	—	2.13	—
Total:	11.76	—	—	30.64	—

Additional material examined: TANZANIA: Nyika Plateau, 6000–7000 ft, 3 ♀ 8subad. ♀ 2subad. ♂, H. H. Johnston (BMNH 97.4.25.29–34). MALAWI: Kondoroi to Koronga, 2000 ft, 3 ♀ 1 ♂ 1subad. ♂ 1imm. (BMNH 97.4.25.35–38); Koba Koba [Nkota Kota], Universities Mission, jar of specimens (BMNH 96.12.4–6). RWANDA: Nyanza, nr Astrida, 1939, 1 ♀, Lestrade (MRAC 22300); Ruhengira [?Ruhengiri], 1931, 1 ♀ with egg sac, Lestrade (MRAC 22314). UGANDA: Ruwenzori [Mokia], SE., 3400 ft, v.1906, 1 ♀, spiders from deep ravines full of thick undergrowth (BMNH 07.2.1.68–73-part); Ruwenzori [Mubuku Valley], 7000 ft, iv.1906, 1 ♀ (BMNH 07.2.1.1–20-part); Ruwenzori, Namwamba Valley, 9000 ft, 1 ♀, Dr J. W. Edwards, British Museum Expedition (BMNH 1935.5.23.1). ZAÏRE: Kivu: Bwido, 1 ♀, 1934, Marlier (MRAC 12443); Bukavu, Lake Kivu, 1 ♀, R. Laurent (MRAC 130.326); Goma, Lake Kivu, 1 ♂, in pitfall trap, x.1988, M. Losseau (NMSA); Lwiro River, 47 km N. Bukavu [=Costermansville, southern edge, Lake Kivu], 1950 m, 1 ♂, 27.viii.1957, 1 ♀ 1 ♂, 15.xii.1957, E. S. Ross & R. E. Leech (CASC); W. Lake Kivu, 1 ♀, 1938, Vandelennoit (MRAC 831); Ibanda [?Bobandana], W. Lake Kivu, 2 ♀, 1935, Vandelennoit (MRAC 26096/ 26097); Kadjudju, W. Kivu, 1 ♀, 1932, L. Burgeon (MRAC 16277); Kashusha, W. Lake Kivu, 2 ♀ 2subad. ♂, 1931, Vandelennoit (MRAC 22296/ 22299); Katwe, 1600 m, 1 ♀, 20.vi.1934, Marlier (MRAC 12444); Tshibinda [just SW of Lake Kivu], 1 ♂, 1932, L. Burgeon (MRAC 29992).

Palystes hoehneli Simon, 1890

Figs 89–96, 109

Palystes höhneli Simon, 1890: 125. Holotype: adult ♀, 'Kilimanjaro' [Tanzania], Höhnel (MNHN 10632) [examined].

Palystes rubrioculatus Strand, 1906c: 689. Holotype: ♂, 'Moschi, Kilimandscharo', Dr Widenmann (SMNS, destroyed). [Synonymised by Strand 1907c: 91.]

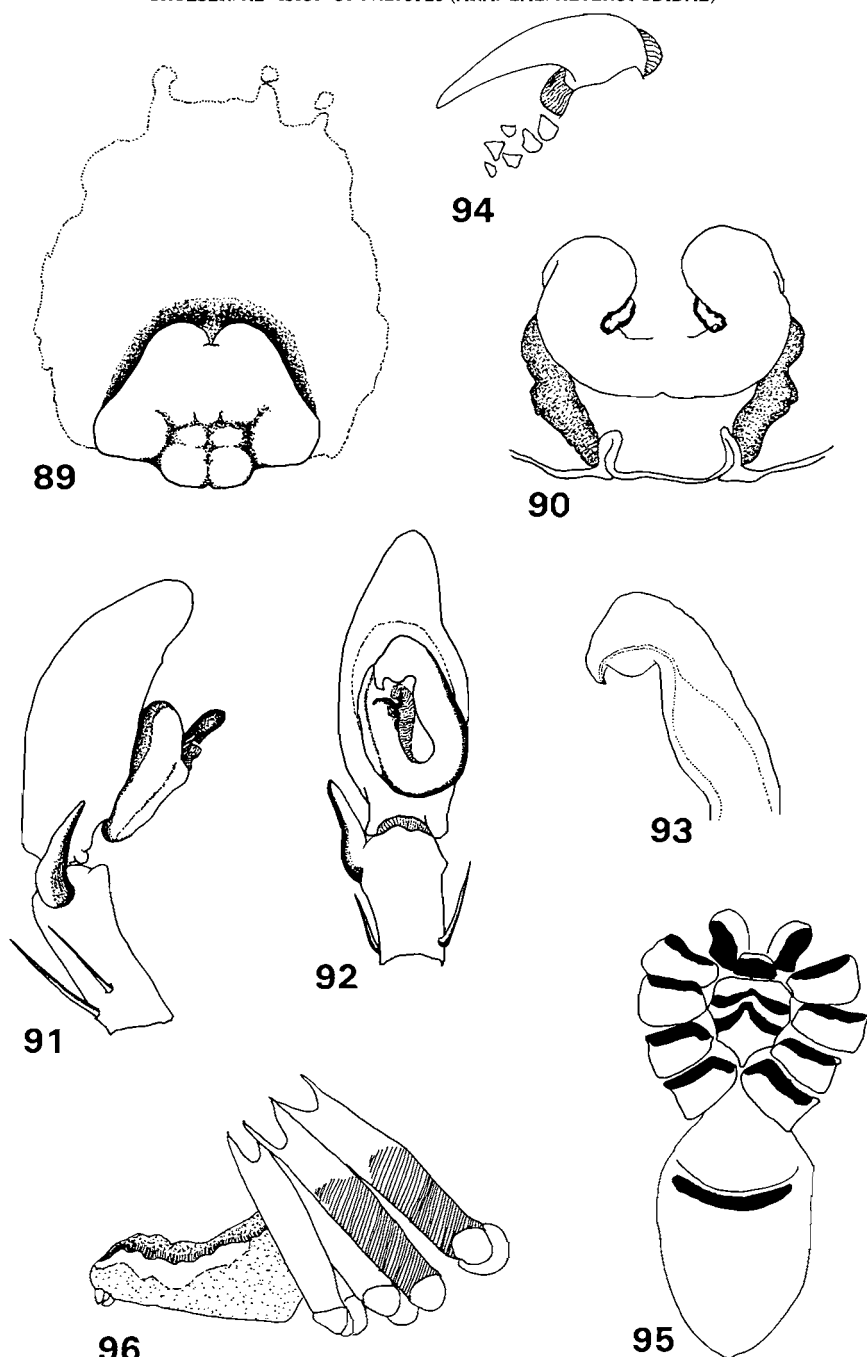
Palystes kibonotensis Lessert, 1921: 393–397, Figs 14, 15, 17, 18. Lectotype ♂ paralectotype ♀ (here designated): 'Kibonoto' [Kilimanjaro Mountains], Prof. Sjöstedt (NHRS) [examined]; 7 ♂ 3 ♀, 5 subadult ♀ paralectotypes (here designated): 'Kibonoto', Collection Roger Lessert, No Cl 8, VII–XI (MHNG) [examined]. **Syn. n.**

Palystes bornemisizai Caporiacco, 1947: 205–206, Pl. II, Fig. 49. Syntypes: 2 ♂ 1 ♀, 'Kilimandjaro' (HNHM, not yet found), 1 ♂, 'Africa Or.' [East Africa] (HNHM, not examined). **Syn. n.**

Remarks: The specimen described by Simon (1890) as *P. höhneli* [here emended in terms of the *Code*], was collected on Mt Kilimanjaro by M. L. von Höhnel. The adult female in MNHN is clearly the holotype.

Undetermined specimens of *P. rubrioculatus* collected by Dr Widenmann, at the type locality, are recorded in an old inventory book at SMNS (F. Renner, *in litt.* 1988), but were destroyed in 1944.

Lessert (1921: 393–397) described *P. kibonotensis* on a syntype series from 'Kibonoto' [probably Kibongoto near Mt Kilimanjaro] collected by the 1905–1906 Swedish expedition. He described an adult male and adult female, but listed (p. 396) material examined as: '♂ ♀, types, 6 ♂, 4 ♀ ad., et plus. subad. VII–XI; 1 ♀ avec cocon, V'. The adult male and female in NHRS and the two vials of specimens in MHNG are undoubtedly part of the same syntype series. The combined number of syntypes for *P. kibonotensis* in both museums is 8 ♂ 4 ♀, 5 subadult ♀ (+ one egg-sac). There thus appear to be several more syntypes than originally listed. I have no



Figs 89–96. *Palystes hoehneli* Simon, 1890. 89. External female epigynum. 90. Internal epigynum (holotype female, MNHN 10632, Kilimanjaro). 91. Retrolateral aspect, male pedipalp. 92. Ventral aspect. 93. Detail of embolus (lectotype male, *P. kibonotensis* de Lessert, NHRS, Kilimanjaro). 94–96. Features of holotype female, *P. hoehneli*. 94. Left cheliceral dentition. 95. Ventral markings. 96. Lateral markings, also showing black marking on underside of femora I–II.

doubt, however, that all the above specimens constitute the syntype series. The adult females are all conspecific with the holotype of *P. hoehneli* Simon, and the males are of the same species. I have therefore recognised *P. kibonotensis* as a junior synonym of *P. hoehneli*. I have designated the adult male in NHRS as lectotype and the remaining specimens listed above as paralectotypes.

Caporiacco (1947) described *Palystes bornemiszae* on a female and two males collected by Bornemisza from 'Kilimandjaro', and a female collected from 'Africa Or.' [East Africa] by Kittenberger in HNHM. The specimens were part of a collection made by Kittenberger, Kovacs, and Bornemisza in East Africa. The type material has not yet been found, but the illustration of the male palp (Plate II, Fig. 49) clearly depicts the *Palystes hoehneli* embolus, with the unmistakable shape of its distal process and its medially bulbous column. The description of the female matches that of Simon's type specimen. Caporiacco notes that while the male palp resembles that of Lessert's *P. kibonotensis*, the specimen differs in that the sternum is darker. There is considerable variability in the intensity of colouring of the sternum in *P. hoehneli* and other members of the *P. superciliosus* group. Despite the absence of the type material, in the light of the matching descriptions and figured male palp, I have little hesitation in regarding *P. bornemiszae* as a junior synonym of *P. hoehneli*.

Diagnosis: Afferent sperm duct of epigynum (Fig. 90) embedded anteriorly on lobe of support collar (not detached as in *P. ansiedippenaarae*), lobe of support collar not anteriorly strongly produced. Distal process of embolus (Figs 92, 93) pronounced, short and flat. Column of embolus (Fig. 93) distinctly bulbous medially.

Distribution: Kenya (Mount Kenya) and Tanzania (Mount Kilimanjaro).

Redescription of holotype female of Palystes hoehneli:

Total length: 22.51 mm.

Colour and markings: Abdomen dorsally with typical pulmonary marking, laterally (Fig. 96) with typical pale cream band, edged dorsally with undulating dark chocolate line, ventrally with faded brown blotches posterior to epigastric groove. Sternum (Fig. 95) with 2 dark transverse bands in line with coxae II and III. Anterior margins of coxae dark. Legs with typical markings, basal half of femora ventrally dark, bases of femora I–II darker than III–IV, tibiae with ventral bands.

Carapace: Dorsally 10.63 long, 8.5 wide between leg bases II. Head region 4.88 wide across PER; thoracic fovea 2.06 long, occupying 0.19 X of CL and 0.24 X of CW. **Eyes:** Eye diameters: AME 0.46; ALE 0.60; PME 0.46; PLE 0.46; PER 3.19 wide, wider than AER by 1.24 X and occupying 0.65 X of HW and 0.38 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.3:1.0:1.0; distances separating eyes: AME–ALE 0.12; AME–AME 0.37; AME–PME 0.69; ALE–PLE 0.57; PME–PLE 0.57; PME–PME 0.54; MOQ dimensions: MOQA 1.26; MOQP 1.45; MOQL 1.45; MOQ as long as wide, narrowed anteriorly, with MOQP 1.21 X wider than MOQA. **Chelicerae:** 3.94 long, 2.19 wide, 1.8 X longer than wide. **Sternum:** 4.0 long, 3.44 wide between coxae II, 1.16 X longer than wide and 2.88 wide between coxae I. **Labium:** 1.85 wide, 1.23 long, 1.5 X wider than long, occupying 0.64 X of SW between coxae I. **Maxillae:** 2.77 long, 1.85 wide, 1.5 X longer than wide.

Abdomen: 11.88 long and 7.5 wide.

Epigynum: Externally, median septum (Fig. 89) 'bow-tie' shaped, with posterior elongation found in all members of species group (*P. superciliosus* excepted). Internally (Fig. 90) afferent sperm duct embedded dorsally on support collar and spermathecae protruding ventrally and partially encircled by internal lobe of support collar.

Legs: Spination typical of genus. Both leg III tarsi missing. Measurements:

	Palpus	I	II	III	IV
Femur	3.75	10.88	11.50	9.13	11.50
Patella	2.00	4.75	4.75	3.75	4.00
Tibia	2.50	10.25	10.25	7.50	8.75
Metatarsus	—	9.00	9.38	6.25	8.75
Tarsus	4.25	2.63	2.63	—	2.25
Total:	12.5	37.51	38.51	—	35.25

Description of lectotype male of Palystes kibonotensis:

Total length: 17.26 mm.

Colour and markings: As for female, but lateral abdominal markings faded and femora ventrally all dark, not just basally (as with most males in this species group).

Carapace: Dorsally 8.13 long, 6.38 wide between leg bases II. Head region 3.44 wide across PER; thoracic fovea 2.00 long, occupying 0.25 X of CL and 0.31 X of CW. *Eyes*: Eye diameters: AME 0.42, ALE 0.49, PME 0.40, PLE 0.40, PER 2.44 wide, wider than AER by 1.18 X and occupying 0.71 X of HW and 0.38 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.19:0.96:0.96; distances separating eyes: AME–ALE 0.09, AME–PME 0.28, AME–PLE 0.48, ALE–PLE 0.46, PME–PLE 0.38, PME–PME 0.45; MOQ dimensions: MOQA 1.17, MOQP 1.23, MOQL 1.11, MOQ 0.90 X longer than wide; narrowed anteriorly, with MOQP 1.05 X wider than MOQA; clypeus 0.45 high, 1.07 X diameter of AME. *Chelicerae*: 3.19 long, 1.50 wide, 2.13 X longer than wide. *Sternum*: 3.13 long, 2.56 wide between coxae II, 1.22 X longer than wide and 2.19 wide between coxae I. *Labium*: 1.48 wide, 0.95 long, 1.55 X wider than long, occupying 0.68 X of SW between coxae I. *Maxillae*: 2.09 long, 1.45 wide, 1.45 X longer than wide.

Abdomen: 9.13 long and 5.50 wide.

Pedipalp: Embolus with lamellate carina apically on same plane as blade, opposite to lower, proximal, prominence, neck short and small. Conductor membranous, long and attenuate basally.

Legs: Spines typical of genus, but femora IV(3:2:2), tibiae I–IV (left) and tibiae III+IV (right) with distal and proximal spines dorsally, right tibia I with proximal only and right leg II missing. Measurements (left legs):

	Palpus	I	II	III	IV
Femur	3.13	10.63	10.88	8.38	10.63
Patella	1.63	4.00	4.13	3.38	3.25
Tibia	1.75	10.38	10.25	7.13	8.50
Metatarsus	—	9.88	7.13	6.50	8.38
Tarsus	3.50	2.75	2.38	2.13	2.25
Total:	10.01	37.64	37.27	27.52	33.01

Additional material examined: KENYA: Mt Kenia, Fort Hall, 8500 ft, 2♂4♀ 7subad.♂ 10 subad.♀, x.1909, Smithsonian Afr. Exped. 1909–1910 (USNM); Kapiti Plains [south of Nairobi], 1♂, v.1909, Roosevelt Expedition (USNM).

Palystes johnstoni Pocock, 1896

Figs 97–100, 109

Palystes johnstoni Pocock, 1896: 57–58, Pl. VIII, Figs 1-1c. Lectotype adult ♀, paralectotype adult ♂ (here designated): Malaŵi: Zomba, between 3000 + 9000 feet, A. Whyte (BMNH 1894.1.15.21,22) [examined].

Remarks: The species description was based on an adult male and adult female collected in Zomba (Malaŵi) at altitudes between *ca* 900–2700 m. The specimens in BMNH match Pocock's description and illustrations, and the label data agree with the information provided by Pocock. I have no doubt that these are the syntypes seen by Pocock, and I have designated the female as lectotype and the male as paralectotype. Both specimens are intact and have all their legs attached except that the male's right leg II is detached from the apex of the femur and has no attached pedipalps (the right pedipalp is in a microvial inside the vial containing both specimens but the left pedipalp is missing). Pocock refers to a third specimen, 'an immature specimen of apparently the same species', from Ugogo [probably Ugogo River, southern highlands of Tanzania] donated by Emin Pasha. I have not found this specimen.

Diagnosis: Sternum with 2 dark transverse bars, abdomen ventrally with dark brown spots, spotting varying from lightly spotted to heavily blotched posterior to epigastric groove. Epigynum internally (Fig. 98) with spermathecae attenuate and detached from, but ventral to, internal support collar and usually hidden from view dorsally when epigynum is dissected. Embolus (Figs 99, 100) thick, recurved though 180°, with a prominent distal lateral ridge (Fig. 100) crossing over onto ventral face of blade and with short, blunt-tipped hook apically.

Distribution: *Palystes johnstoni* is widespread in Zimbabwe and Malaŵi, and reaches just east of Umtali into Mozambique (Pungwe River) and south into the Okavango delta of Botswana. It has not been found elsewhere except for specimens collected by P. L. G. Benoit (MRAC) in Mityana (80 km north-west of Entebbe, Uganda).

Redescription of lectotype female:

Total length: 27.76 mm.

Colour and markings: Abdomen dorsally with dark-outlined pulmonary marking, laterally with pale longitudinal cream band on either side, edged dorsally with undulating dark chocolate line, ventrally with dark transverse band posterior to epigastric groove. Area between band and spinnerets spotted with brown, spots faded in type specimen but usually ranging from small to large, nearly coalescing, dark brown blotches, often forming a rectangular darker panel between epigastric groove and spinnerets, flanked by smaller spots. Sternum with 2 faded, rubbed, dark transverse bars (in fresher specimens bars generally clearly defined and dark black).

Carapace: Dorsally 12.88 long, 10.63 wide between leg bases II. Head region 6.25 wide across PER; thoracic fovea 2.25 long, occupying 0.17 X of CL and 0.21 X of CW. **Eyes:** Eye diameters: AME 0.52, ALE 0.77, PME 0.52, PLE 0.52, PER 3.88 wide, wider than AER by 1.19 X and occupying 0.62 X of HW and 0.37 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.47:1:1; distances separating eyes: AME–ALE 0.18, AME–AME 0.42, AME–PME 0.94, ALE–PLE 0.77, PME–PLE 0.69,

PME–PME 0.69; MOQ dimensions: MOQA 1.45, MOQP 1.78, MOQL 1.69, MOQ 0.95 X longer than wide, narrowed anteriorly, with MOQP 1.2 X wider than MOQA. *Chelicerae*: 5.0 long, 2.8 wide, 1.78 X longer than wide. *Sternum*: 4.8 long, 4.38 wide between coxae II, 1.1 X longer than wide and 4.06 wide between coxae I. *Labium*: 2.09 wide, 1.48 long, 1.42 X wider than long, occupying 0.51 X of SW between coxae I. *Maxillae*: 3.2 long, 2.31 wide, 1.39 X longer than wide.

Abdomen: 14.88 long and 11.50 wide.

Epigynum: Epigynum fully formed but sclerotisation incomplete in type specimen, with bulbous lobes of the well when viewed externally (Fig. 97) still pale and not dark red-brown as is more usual (suggesting a newly adult female). Internally the long, thin spermathecae are hidden from view behind lobes of support collar (Fig. 98).

Legs: Spine pattern and markings typical of genus, but femur IV(3:2:2). Measurements:

	Palpus	I	II	III	IV
Femur	4.38	14.38	14.75	11.50	14.63
Patella	2.13	5.63	5.75	4.75	4.50
Tibia	3.13	13.38	13.75	10.25	11.25
Metatarsus	–	12.50	12.13	8.38	11.00
Tarsus	5.50	3.13	2.88	2.25	2.63
Total:	15.14	49.02	49.26	37.13	44.01

Redescription of paralectotype male:

Total length: 17.75 mm.

Colour and markings: As for female, but markings clearer and not as faded, and femora ventrally all dark (as with most males in this species group).

Carapace: Dorsally 9.00 long, 7.38 wide between leg bases II. Head region 4.00 wide across PER; thoracic fovea 2.38 long, occupying 0.26 X of CL and 0.32 X of CW. *Eyes*: Eye diameters: AME 0.46, ALE 0.58, PME 0.43, PLE 0.43, PER 2.63 wide, wider than AER by 1.14 X and occupying 0.66 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.27:0.93:0.93; distances separating eyes: AME–ALE 0.09, AME–AME 0.26, AME–PME 0.54, ALE–PLE 0.46, PME–PLE 0.43, PME–PME 0.43; MOQ dimensions: MOQA 1.11, MOQP 1.26, MOQL 1.23, MOQ 0.98 X longer than wide; narrowed anteriorly, with MOQP 1.14 X wider than MOQA; clypeus 0.31 high, 0.67 X diameter of AME. *Chelicerae*: 3.13 long, 1.69 wide, 1.85 X longer than wide. *Sternum*: 3.94 long, 3.19 wide between coxae II, 1.24 X longer than wide and 2.25 wide between coxae I. *Labium*: 1.57 wide, 0.98 long, 1.59 X wider than long, occupying 0.70 X of SW between coxae I. *Maxillae*: 2.09 long, 1.23 wide, 1.70 X longer than wide.

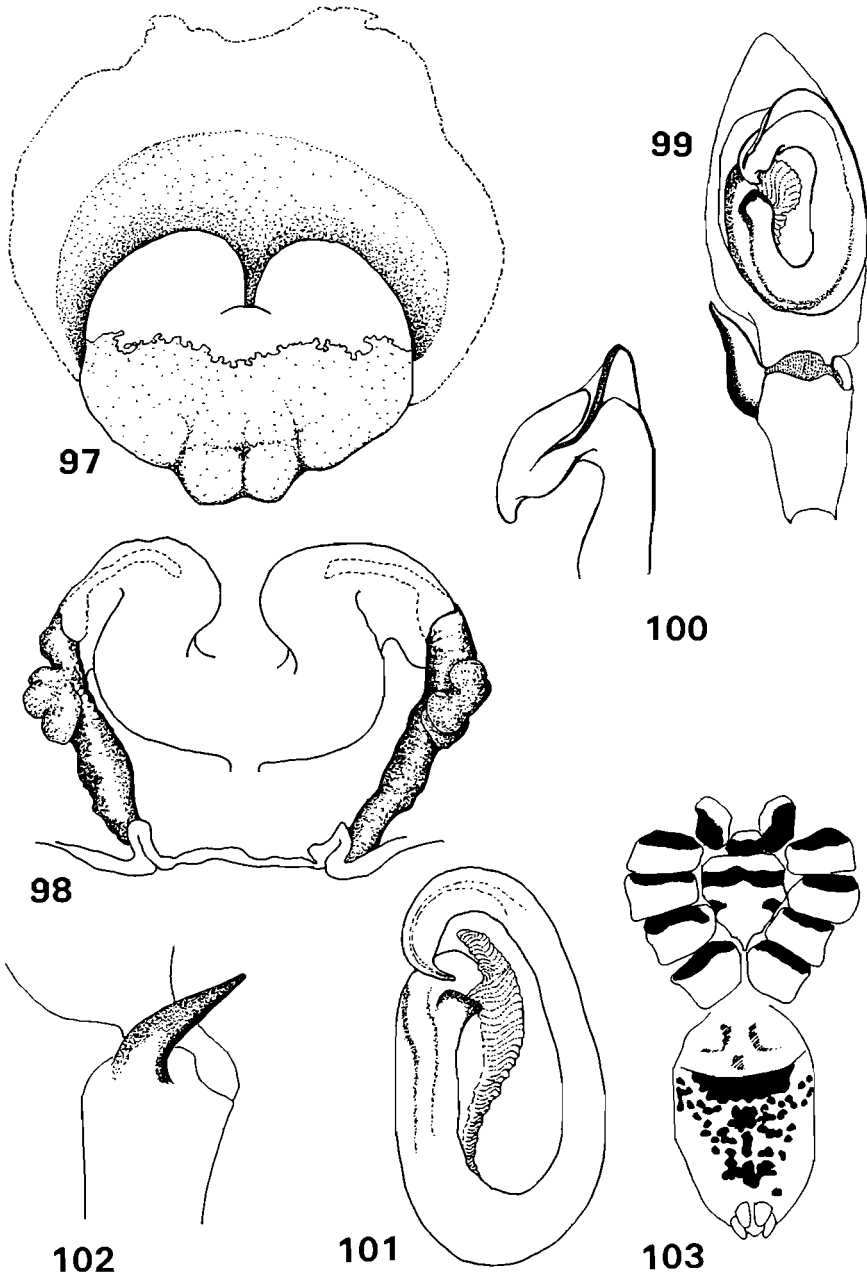
Abdomen: 8.75 long and 5.0 wide.

Pedipalp: Embolus (Figs 99, 100) thick, recurved though 180, with prominent distal lateral ridge crossing onto ventral face of blade and with short, blunt-tipped hook apically. Embolus neck distinct, conductor membranous, short, wide and abruptly terminated basally (Fig. 99).

Legs: Spines of right legs typical of genus, but dorsal proximal and distal spines missing on II and distal only on regrown III. Spine pattern otherwise as for genus. Measurements:

	Palpus	I	II	III	IV
Femur	3.75	12.63	12.50	9.88	12.25
Patella	1.75	4.38	4.75	3.50	3.50
Tibia	2.50	12.50	12.50	9.13	10.00
Metatarsus	—	11.50	11.00	7.50	9.75
Tarsus	4.25	2.50	2.50	1.88	2.25
Total:	12.25	43.51	43.25	31.89	37.75

Additional material examined: BOTSWANA: Okovango [Okavango] Delta, 4-rivers camp, 19°03'S 23°10'E, 1♂, 7.xii.1973, Falcon College & NMBZ expedition (NMBZ NMZ/A932). MALAWI: Zomba, A. Sharp (BMNH); Zomba, 1♀, J. R. Lennon, *ca* 1950 (BMNH). MOZAMBIQUE: Pungwe River, 50 mls E. Umtali [Zimbabwe], 4♂6♀ 4subad.♀, 1903, D. Patrick (SAMC 13621). UGANDA: Mityana, 1♂ (pedipalp only), 1♀, 1959, P. L. G. Benoit (MRAC 146.163). ZIMBABWE: Birchenough Bridge, Sabi River, 1♀, i.1938, V. Fitzsimons (TMSA 8175); Bulawayo: 1♂, 21.ix.1979, A. Thompson (NMBZ NMZ/A630), 2♂, x.1960 (NMBZ NMZ/A1148), Kumalo, 20°10'S 28°35'E, 1♂, 2.ix.1979, G. Allen (NMBZ NMZ/A158), Matsheumhlope, 28°10'S 28°35'E, 1♂, 30.vi.1979, D. Wheeler (NMBZ NMZ/A660), Matsheumhlope, 28°10'S 28°35'E, 2♂2♀ 2subad.♀ 1subad.♂, ix.1979, D. Wheeler (NMBZ NMZ/A689); Cement, Montgomery, 20°07'S 28°45'E, 1♀, 23.vii.1979, W. Black (NMBZ NMZ/A108); Chishawasha [17°47'S 31°14'E], 1♀, 26.x.1983, A. Mukondo (NMBZ NMZ/A2018); Esigodini [30 km SE. Bulawayo], Falcon College, 1♀, 19.xi.1984, M. Bing (NMBZ NMZ/A2767); Harare [= Salisbury]: 1♂, 21.ix.1985, S. A. L. White (NMBZ NMZ/A1233), 1♀, 14.xi.1967, R. A. Bailey (NMBZ NMZ/A1440), Mabelreign, 1♂, 11.xi.1968, M. A. Raath (NMBZ NMZ/A1549), 1♀, 3.ix.1967, D. J. Woodiwiss (NMBZ NMZ/A1212), 1♂, 19.ix.1966, B. W. Blair (NMBZ NMZ/A1300), 1♂, 13.x.1969, S. Holland (NMBZ NMZ/A1556), Haig Park, 1subad.♀, 6.ii.1971, V. Bosselli (NMBZ NMZ/A1470), 1subad.♀, ix.1967, Miss Levesque (AMGS), 1♀, 17.ix.1968, Miss J. Blowers (AMGS); Khami, 20°10'S 28°25'E, [12 km SW. Bulawayo], 1♀, x.1965 (NMBZ NMZ/A723); Matopos [35 km SW. Bulawayo], R. E. P. School, 20°22'S 28°35'E, 3♂4♀, 18–23.ix.1979, 7.x.1979, 16.x.1979, S. Higgins (NMBZ NMZ/A424, NMZ/A319, NMZ/A1238); Matopos, Maleme, 20°32'S 28°30'E, 1♂, 20.viii.1978, C. A. Car (NMBZ NMZ/1161); Mazoe, 1♂ 1subad.♀, J. Darling (BMNH); Mine Hill, Lalapanzi Distr., Uplands Farm, 1♀, 18.ii.1985, G. Allen (NMBZ NMZ/A3709); Murambinda [137 km S. Harare], 1subad.♂, ix.1984, Hindley (NMBZ NMZ/A2931); Mutare [= Umtali]: 2♀, 3.xi.1984, S. van der Pyll (NMBZ NMZ/A2214), 1♀ 1subad.♀, 20+24.xi.1898, J. F. F. Darling (BMNH 1898.11.20.24), 1♀ (office – bit man – chest pains, difficulty in breathing. Treated with antihistamines), vi.1982, Mrs J. Brown (NMBZ NMZ/A1562), 1♀, 27.xii.1965, D. Walton ([?NMBZ] UM/S 398), 2♂, ii.1903, Miss Campbell (AMGS), 1♀, 6.x.1961, J. Weiman (NMBZ NMZ/A1429), 6♂5♀, ix.1916, H. Hosgood (AMGS), Fairbridge Park, 1♂, 14.x.1984, P. Locke (NMBZ NMZ/A2712), hospital, 1♀, 30.ix.1966, Palgrave (NMBZ NMZ/A1050), Penhalonga, 18°53'S 32°43'E, Hillcrest School, 1♂, 16.xi.1984, S. van der Pyl (NMBZ NMZ/A2717), Penhalonga, Hillcrest School, 1♀, i.ii.1985, Mr Ehlinger (NMBZ NMZ/A3413), Penhalonga, 1♀, x.1943 (NMBZ NMZ/A1215), Yeovil, 2♀, 16.xii.1966, B. Marais (AMGS), Yeovil, 1♀, 16.xii.1966, B. Marais (NMBZ NMZ/A726), Baviaanskop, 3♂2♀ 1subad.♂



Figs 97–103. *Palystes johnstoni* Pocock, 1896 and *P. leroyorum* sp. n. 97–100. *P. johnstoni*. 97. External female epigynum. 98. Internal epigynum with dotted outline of spermathecae lying beneath invaginated collar of septum (lectotype female, BMNH 1894.I.15.21–22, Zomba, Malawi). 99. Ventral aspect, male pedipalp. 100. Detail of apex of embolus (paralectotype male, BMNH 1894.I.15.21–22, Zomba, Malawi). 101–103. *P. leroyorum*. 101. Detail of embolus. 102. Retrolateral aspect, tibial apophysis. 103. Ventral markings of spider (holotype male, NMBA 1395, Bloemfontein).

1subad.♀, vi.1902, D. Patrick (SAMC 12543), Queenskop, 1♀, i.1902, D. L. Patrick (SAMC 12532), Greenside, 1♂, 20.xi.1965, Palgrave (UM/S 315); Nyamandhlovu, Bonisa Farm, 19°50'S 28°20'E, 2♂, 26.ix.1979, 20.xii.1979, T. Gibbs (NMBZ NMZ/A301); Tuli Road [21°S 29°E], 1♂ 1subad.♂ 3subad.♀, 22.vii.1979, D. K. B. Wheeler (NMBZ NMZ/A1552); Vumba, south of Umtali, 1♀ (TMSA 1415). PROVENANCE?: 1♂2♀, incompletely labelled (SAMC 3848).

***Palystes ansiedippenaarae* sp. n.**

Figs 104–108, 109

Type material:

Holotype: adult ♂, SOUTH AFRICA: **Transvaal:** Warburton, Jessievale Forest Reserve [26°15'S 30°32'E], under dry pine bark, 23.vii.1979, M. Stiller (PPRI AcAT '80/179).

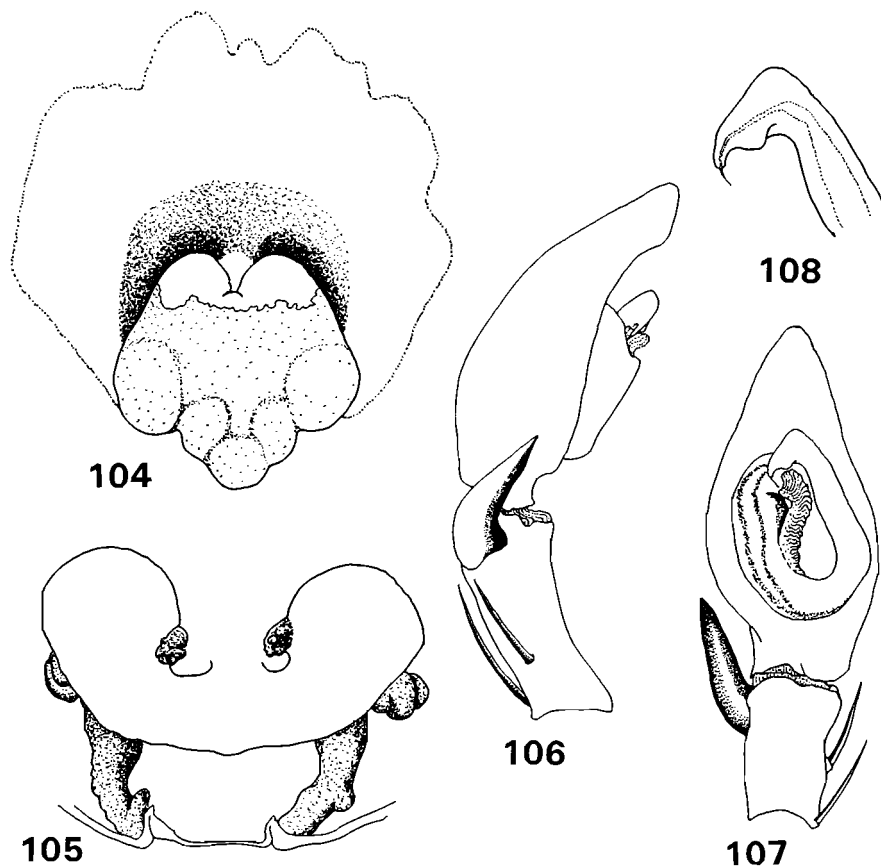
Paratypes: SOUTH AFRICA: **Transvaal:** Warburton, Jessievale Forest Reserve [26°15'S 30°32'E]: under dry thin bark of pine log, 1.viii.1979, M. Stiller (PPRI AcAT '80/187), 1♂, under flap of cardboard box, 24.iii.1979 (PPRI AcAT '80/184), 1♂, same data but 22.vii.1979 (PPRI AcAT '80/199) 1♂, same data but, 24.vii.1979 (NMSA T497), 1♀, under dry pine bark, 20.vii.1979 (NMSA T498), 1♀, same data but, 23.vii.1979 (PPRI AcAT '80/173), 1♀, under dry bark on pine log, 19.vii.1979 (PPRI AcAT '80/197), 1♀, under dry, thin bark of *Pinus patula* log, 13.vi.1979 (PPRI AcAT '80/211), 1♀, under dry bark on pine logs, 19.vii.1979 (PPRI AcAT '80/166), 1♀, under dry thin bark of dead pine tree, 4.viii.1979 (PPRI AcAT '80/198), 1♀, under flap of cardboard box in plantation, 22.vii.1979 (PPRI AcAT '80/172); Ermelo district, Aarthol, 1♀, 25.I.1911, M. Forbes (TMSA 1111). **Natal:** Ndumu Game Reserve, 26°53'S 32°16'E, 1♀, i.1968, T. Pike (NMSA 12387).

Type locality: Warburton district, 40 km SE. Carolina, Jessievale Forest Reserve, 26°15'S 30°32'E, south-eastern Transvaal, South Africa.

Etymology: Named in honour of Dr Ansie Dippenaar-Schoeman who has played a leading role in promoting contemporary arachnological research in South Africa and was responsible for the collecting surveys that led to the discovery of this new species.

Diagnosis: Distinguished from *P. superciliosus* in the markings and form of genitalia. Generally smaller and darker than *P. superciliosus*, with sternum either black with no other markings or dark with 3 black transverse bars coalescing mesially (as opposed to single dark bar in *P. superciliosus*), and with dark spots ventrally on abdomen between transverse dark bar posterior to epigastric groove (as opposed to either a greyish bell-shaped marking or no marking but 4 longitudinal striae in *P. superciliosus*). Epigynum (Fig. 104) differs externally from *P. superciliosus* in that it is produced posteriorly and not contracted (as in Fig. 77), while internally (Fig. 105), the spermathecae are enfolded by support collar lobes, but not horizontal and lying dorsally on top of lobes (Fig. 78). Embolus (Fig. 108) with lateral carinations distally, as opposed to no carination in *P. superciliosus* (Fig. 80). Adult male distinguished from its closest relative, *P. hoehneli* from east Africa, in form of embolus which is slender mesially (Fig. 107) and not bulbous (Figs 92–93) and in

distal carination which is reduced and elongate (Fig. 108) as opposed to pronounced, short and flat (Fig. 93), and proximal carination which is opposite distal carination (as opposed to closer to embolar tip). In female afferent sperm duct is external to lobe of supporting collar (Fig. 105) as opposed to embedded (Fig. 90).



Figs 104–108. *Palystes ansiedippenaarae* sp. n. 104. External female epigynum. 105. Internal female epigynum (paratype female, PPRI AcAT '80/187, Jessievale Forest Reserve, Warburton). 106. Retrolateral aspect, male pedipalp. 107. Ventral aspect, male pedipalp. 108. Detail of apex of embolus (holotype male, PPRI AcAT '80/197, Jessievale Forest Reserve, Warburton).

Distribution: From western Transvaal (Nylstroom) through south-eastern Transvaal (Ermelo and Warburton districts) to northern Zululand, Natal.

Description of holotype male:

Total length: 16.88 mm.

Colour and markings: As in *P. hoehneli*, male darker in colour than other species in *superciliosus* group. Abdomen generally dark and mottled, lateral longitudinal undulating markings only just discernible. Dark markings a rich dark brown, varying from burnt umber to raw sienna, to black. Ventrally, a dark transverse bar immediately posterior to epigastric groove with irregular dark liver-brown blotch

markings between bar and spinnerets, with those in centre region darker than the rest. Sternum dark with a yellowish patch posteriorly. Three broad dark bars across sternum, in line with coxae II, III and IV, coalescing at centre and occupying most of sternum. Dark bars continue on anterolateral faces of coxae and femora ventrally. Much of labium and maxillae also dark ventrally.

Carapace: Dorsally 9.38 long, 7.75 wide between leg bases II. Head region 4.19 wide across PER; thoracic fovea 2.25 long, occupying 0.24 X of CL and 0.29 X of CW. *Eyes*: Eye diameters: AME 0.45, ALE 0.60, PME 0.42, PLE 0.42, PER 2.75 wide, wider than AER by 1.10 X and occupying 0.66 X of HW and 0.35 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.34:0.93:0.93; distances separating eyes: AME-ALE 0.09, AME-AME 0.35, AME-PME 0.57, ALE-PLE 0.51, PME-PLE 0.42, PME-PME 0.43; MOQ dimensions: MOQA 1.20, MOQP 1.32, MOQL 1.35, MOQ 1.02 X longer than wide; narrowed anteriorly, with MOQP 1.58 X wider than MOQA; clypeus 0.38 high, 0.86 X diameter of AME. *Chelicerae*: 3.69 long, 1.88 wide, 1.97 X longer than wide. *Sternum*: 3.75 long, 3.25 wide between coxae II, 1.15 X longer than wide and 2.63 wide between coxae I. *Labium*: 1.66 wide, 1.08 long, 1.54 X wider than long, occupying 0.63 X of SW between coxae I. *Maxillae*: 2.62 long, 1.45 wide, 1.81 X longer than wide.

Abdomen: 7.50 long and 5.25 wide.

Pedipalp: Embolus (Figs 107, 108) with proximal lateral carination small and closer to embolus tip than to distal carination. Embolus terminates in an elongate, acicular point (Fig. 108).

Legs: Spines typical of genus but left femur IV(3:2:2), right femur IV(3:2:1). Measurements:

	Palpus	I	II	III	IV
Femur	4.25	13.88	14.13	10.88	13.25
Patella	1.88	5.13	5.13	4.00	4.38
Tibia	2.50	13.38	13.50	9.75	11.25
Metatarsus	—	12.63	12.50	8.13	10.88
Tarsus	4.38	3.00	3.00	2.25	2.75
Total:	13.01	48.02	48.26	35.01	42.51

Description of paratype female (PPRI AcAT '80/187):

Total length: 20.51 mm.

Colour and markings: Generally dark. Abdomen dorsally with pulmonary marking, laterally dark, but with paler longitudinal band on either side, edged dorsally with undulating darker line, ventrally with dark transverse band posterior to epigastric groove and dark liver-brown spots or blotches. Area between band and spinnerets darker with larger spots. Sternum dark, ranging in other specimens from black with no evident markings to dark with 3 black transverse bars at coxae II, III and IV, coalescing mesially. Femora I and II ventrally dark with whitish yellow patch distally. Tibiae I-IV with alternate 2 dark and 2 pale bands ventrally.

Carapace: Dorsally 9.88 long, 7.88 wide between leg bases II. Head region 4.69 wide across PER; thoracic fovea 2.00 long, occupying 0.20 X of CL and 0.25 X of CW. *Eyes*: Eye diameters: AME 0.46, ALE 0.62, PME 0.46, PLE 0.46, PER 3.00 wide, wider than AER by 1.17 X and occupying 0.64 X of HW and 0.38 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.33:1.00:1.00; distances separating eyes:

AME–ALE 0.11, AME–AME 0.34, AME–PME 0.54, ALE–PLE 0.54, PME–PLE 0.55, PME–PME 0.54; MOQ dimensions: MOQA 1.14, MOQP 1.38, MOQL 1.38, MOQ 1.00 X longer than wide, narrowed anteriorly, with MOQP 1.22 X wider than MOQA. *Chelicerae*: 3.63 long, 2.13 wide, 1.71 X longer than wide. *Sternum*: 3.63 long, 3.31 wide between coxae II, 1.09 X longer than wide and 3.00 wide between coxae I. *Labium*: 1.69 wide, 1.23 long, 1.38 X wider than long, occupying 0.56 X of SW between coxae I. *Maxillae*: 2.49 long, 1.54 wide, 1.62 X longer than wide.

Abdomen: 10.63 long and 7.38 wide.

Epigynum: Externally (Fig. 104), median septum produced posteriorly. Internally (Fig. 105), tubules leading to spermathecae (afferent sperm ducts) external to lobes of support collar. Spermathecae enfolded by support collar lobes, but visible, not embedded.

Legs: Spine pattern generally as for genus, but in described female some spines missing on some legs: left femur I(2:2:3), right femur I(3:2:3), left femora II–III(3:2:3), right femur II(1:2:3), right femur III(3:2:3), right and left femora IV(3:2:1). Measurements:

	Palpus	I	II	III	IV
Femur	3.88	11.63	11.88	9.13	11.38
Patella	2.00	4.75	4.88	3.88	3.88
Tibia	2.63	11.38	11.25	8.13	9.00
Metatarsus	–	10.25	9.75	6.63	8.75
Tarsus	4.38	2.75	2.75	2.00	2.25
Total:	12.89	40.76	40.51	29.77	35.26

Additional material examined: None.

***Palystes leroyorum* sp. n.**

Figs 101–103, 109

Type material:

Holotype: adult ♂, SOUTH AFRICA: **Orange Free State**: Bloemfontein, 30.i.1986, L. de Wet (NMBA 1395).

Paratypes: SOUTH AFRICA: **Orange Free State**: Bloemfontein, 1♂, in house, 2.ix.1989, L. Barkhuizen (NMBA 3268); Bloemfontein, 1♂, in cupboard, 26.ix.1989, L. Barkhuizen (NMBA 3273). **Transvaal**: 70 km NW. Nylstroom, 1♂, 6.iv.1994, M. Filmer (NMSA); Johannesburg Zoo, found x.1986, preserved vii.1987, M. Filmer (NMSA).

Type locality: Bloemfontein, Orange Free State, South Africa.

Etymology: Named in honour of John and Astri LeRoy for their contribution towards promoting arachnology to a wider audience in southern Africa, both through the Spider Club of South Africa, and through their dedicated fieldwork and assistance to all arachnologists.

Diagnosis: Ventral abdominal markings (Fig. 103) and form of tibial apophysis (Fig. 102) and embolus (Fig. 101) readily distinguish *P. leroyorum* from its closest relatives, *P. ellioti* and *P. superciliosus*. In *P. leroyorum* area between black bar immediately posterior to epigastric groove and spinnerets peppered with irregular, fine black spots (as opposed to brown blotches coalescing medially in *P. ellioti*, or no

markings or faint grey shield marking in *P. superciliosus*). Tibial apophysis in *P. leroyorum* sharply bent and projects ventrally (Fig. 102), compared with relatively straight and directed apically in other 2 species (Figs 79, 83). Embolus in *P. leroyorum* very broad and flat apically with broad, unnotched inner flange (Fig. 101). In *P. superciliosus* embolus narrow and acicular apically, while in *P. ellioti* it is broad and flat but without wide inner flange. Female unknown.

Distribution: Bloemfontein area (Orange Free State) and Nylstroom district, western Transvaal.

Description of holotype male:

Total length: 20.76 mm.

Colour and markings: Dorsally, a dark mottled greyish brown and black. Abdomen dorsally with a darker cardiac outline marking flanked by paired paler patches diminishing in size and merging with background colour posteriorly. Abdomen laterally darkly mottled, paler below with dark grey-black stippling. Ventrally (Fig. 103), a dark broad black transverse bar immediately posterior to epigastric groove, followed by an irregular scattering of intense black spots, some coalescing, against a pale background. Femora ventrally dark with lacework of fine, irregular white spotted markings. Sternum with black solid bar at coxae II in line with dark anterolateral aspects of coxae.

Carapace: Dorsally 10.13 long, 8.50 wide between leg bases II. Head region 4.50 wide across PER; thoracic fovea 2.63 long, occupying 0.26 X of CL and 0.31 X of CW. *Eyes*: Eye diameters: AME 0.46, ALE 0.65, PME 0.49, PLE 0.48, PER 3.06 wide, wider than AER by 1.14 X and occupying 0.68 X of HW and 0.36 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.40:1.07:1.03; distances separating eyes: AME-ALE 0.09, AME-AME 0.35, AME-PME 0.85, ALE-PLE 0.46, PME-PLE 0.42, PME-PME 0.54; MOQ dimensions: MOQA 1.23, MOQP 1.48, MOQL 1.54, MOQ 0.96 X longer than wide, narrowed anteriorly, with MOQP 1.20 X wider than MOQA; clypeus 0.43 high, 0.93 X diameter of AME. *Chelicerae*: 3.56 long, 1.94 wide, 1.84 X longer than wide. *Sternum*: 4.06 long, 3.69 wide between coxae II, 1.10 X longer than wide and 3.19 wide between coxae I. *Labium*: 1.75 wide, 1.17 long, 1.50 X wider than long, occupying 0.55 X of SW between coxae I. *Maxillae*: 2.52 long, 1.63 wide, 1.55 X longer than wide.

Abdomen: 10.63 long and 6.38 wide.

Pedipalp (Figs 101–102): Embolus reflexed distally with a wide, flat, unnotched inner flange. Tibial apophysis entire but bent sharply at base to project ventrally.

Legs: Spines typical of genus with femora I–III(3:2:3), femora IV(3:2:2); tibiae I–IV with dorsal proximal and distal spines present. Measurements:

	Palpus	I	II	III	IV
Femur	4.13	13.13	13.63	10.88	13.38
Patella	1.63	5.00	5.13	4.13	4.00
Tibia	2.50	13.25	13.38	9.75	11.13
Metatarsus	—	12.25	12.25	8.75	11.00
Tarsus	4.38	3.13	3.13	2.38	2.75
Total:	12.64	46.76	47.52	35.89	42.26

Additional material examined: None.

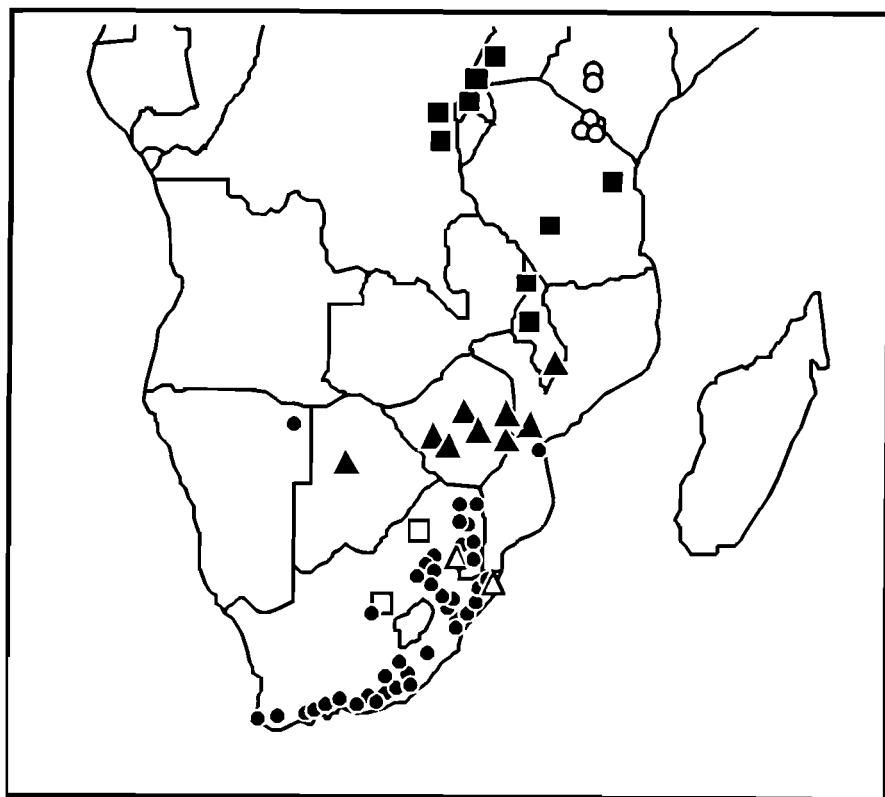


Fig 109. Map showing distribution of the *Palystes superciliosus* species group. ■ = *P. ellioti*; ○ = *P. hoehneli*; ▲ = *P. johnstoni*; ● = *P. superciliosus*; □ = *P. leroyorum*; △ = *P. ansiedippenaarae*.

Palystes species *incertae sedis*

The following nominal species are removed from *Palystes* s.s. for the reasons stated below they cannot be assigned with confidence to any genus known to me and are therefore listed in their original combination, and treated as *incertae sedis*:

Palystes flavidus Simon, 1897

Palystes flavidus Simon, 1897b: 489. Holotype: subadult ♀, 'Trichonopoly' [India], (MNHN 10907), [examined].

Remarks: In addition to the subadult female, there is an adult female in the vial together with a microvial containing the detached epigynum of the adult. Simon probably added the adult later. The specimens appear to belong to the same species, but neither belong in either *Palystes* or *Gnathopalystes*. The cheliceral dentition (four teeth on retromargin, three on antero-margin with pad of microdenticles on fang furrow floor), the epigynal structure (with lateral lobes separated by median septum), posterior eye row (slightly recurved, PLE raised on tubercles) and proportions of the eyes suggest, however, that the species belongs in *Heteropodinae* s. s.

Gravely (1932) states that the live female is pale green and the live male more

yellowish green. His illustration (1932: 258, Fig. 14a) of the female epigynum, however, differs considerably from that of the adult female in MNHN.

The BMNH has a number of specimens determined as *Palystes flavidus* from 'Allahabad', 'Chingleput', Madras and Calcutta.

Palystes fornasinii (Pavesi, 1881)

Sparassus fornasinii Pavesi, 1881: 548, holotype: adult ♂, 'Inhambane', Mozambique (type not MCSN) (not examined).

Palystes fornasinii; Simon, 1903: 1028 (transferred to *Palystes*).

Remarks: The holotype of *S. fornasinii* is not in MCSN and has not been located elsewhere. The description places it outside *Palystes*, considering the described eye proportions and arrangement, and cheliceral dentition. The latter (retromargin with four large teeth, antero-margin with one large tooth) could agree with the male of the female illustrated and described by Järvi (1914: 197) as *Heteropoda venatoria* (Linnaeus, 1767), if it is possible that Pavesi had not observed the two very small, teeth that flank the large tooth of the antero-margin. The rest of the description does fit that of males identified as *Heteropoda venatoria* (*sensu* Järvi), which have been collected in Mozambique and Cameroon. The description, however, does not provide sufficient specific information to justify its transferral to *Heteropoda*. In the absence of the type material and being unable to place it elsewhere, I regard the name as *incertae sedis*.

Palystes pinnotherus (Walckenaer, 1805)

Thomisus pinnotheres [sic] Walckenaer, 1805: 36. Provenance: 'Notasie'. [Specimen from 'Collection du Museum de Paris' (Walckenaer, *ibid.*)] (?MNHN). *Nomen nudum* [not located, presumed lost].

Olios pinnotherus Walckenaer, 1837: 565. Syntypes: ♂♀, 'Monde-Maritime-Notasie-Du Port-Jackson, dans la Nouvelle-Holland' (?MNHN) [types not located, presumed lost].

Palystes pinnotherus; L. Koch 1875: 703 (redescribed as an included species of *Palystes*).

?*Thomisus lamarck* Latreille, 1806: 113. Sex/provenance unknown (?MNHN) [not located, presumed lost].

?*Thomisus lamarckii* [sic]; Walckenaer, 1837: 566 (listed as a synonym of *pinnotherus*).

Remarks: Walckenaer (1837: 566) refers to an illustration 'fig. 29' illustrating *Thomisus pinnotheres* in Walckenaer (1805). There is no illustration of *pinnotheres* in the book. Fig. 29 is an illustration of *Thomisus cancerides*, according to both the description of *cancerides* and the legend to the plates. The name *pinnotheres* was published without a description and is therefore a *nomen nudum*. It only became available when Walckenaer described the species in 1837. Walckenaer (1837) synonymised *Thomisus lamarck* Latreille, 1806, with *Olios pinnotherus*. Since only *pinnotherus sensu* Walckenaer, 1837, is valid, *lamarck* (Latreille, 1806) would be the senior synonym. Bonnet, however (1958: 3312 footnote 24) says the names are not synonymous. In the absence of the type material which has not been found, and in view of the confusion of the identity of this species, the name is considered *incertae sedis*.

Palystes reticulatus Rainbow, 1899

Palystes reticulatus Rainbow, 1899: 312, Pl. xxiv, Fig. 4. Syntypes: 3 immature ♀, Santa Cruz, Oceania, [AMSA K27589 / KS 9301[on reverse]] [examined].

Remarks: The type material is immature but does not belong in *Palystes*. It belongs

within Heteropodinae because of the following combination of characters: ALE>>AME>PME=PLE; upper rims of AME on a common line with those of ALE; presence of microdenticles on fang furrow floor; cheliceral dentition 4(proximal very small):2). It does not appear to belong in *Heteropoda* or *Gnathopalystes* because of the combination of the very shallow clypeus, the width of the labium (wider than long), the presence of PLE tubercles and the relative straightness of PER.

Palystes spiralis Strand, 1907

Palystes spiralis Strand, 1907d: 109 [amplified in Strand 1907e: 109]. Holotype: adult ♂, 'Nossibe', Madagascar. Type not located (probably destroyed in Lubeck museum during second world war).

Remarks: Strand (1907e: 112) noted that his species was not a typical *Palystes*, but that the genus had many diverse genitalic forms. He suggested a subgeneric name *Spiralifera* for *spiralis* (the subgeneric name has no nomenclatural standing). The description excludes the species from *Palystes*, not only because of the domed cephalothorax and the larger, slightly raised posterior lateral eyes, but also because of the thin, multi-spiralled embolus and separate conductor sheath described by Strand. If no existing genus can be found for this species then *Spiralifera* should be recognised at generic level, with *spiralis* as its type species (by monotypy). This Madagascan species is possibly conspecific with *P. convexus*, discussed below. Until more material is seen, *P. spiralis* is removed from *Palystes* and is regarded as *incertae sedis*.

Palystes convexus Strand, 1907

Palystes convexus Strand, 1907d: 737 [amplified in Strand 1907e: 112]. Holotype: subadult ♀, 'Majunga', Madagascar; type in ZMHB according to Strand, not found [not examined].

Remarks: The description corresponds in all major respects with that of *P. spiralis* Strand, 1907, including the leg spination, cephalothorax shape, proportions and arrangement of eyes, and the cheliceral dentition. This may be the female of *P. spiralis*. If the two names are synonymous, then *P. convexus* has priority as the preliminary diagnosis of *P. convexus* was published earlier in 1907. *P. convexus*, like *P. spiralis*, is removed from *Palystes* on the same grounds. For the present, in the absence of the type material, and in view of the description which does not provide sufficient information to place the species in any genus known to me, it is regarded as *incertae sedis*.

Parapalystes gen. n.

Type species: *Parapalystes euphorbiae* sp. n. (north-western Cape, South Africa).

Etymology: Gr. *para* = near, beside, by. Refers to the sister-group relationship between *Parapalystes* and *Palystes*. Gender masculine.

Remarks: *Parapalystes* is the putative sister group to *Palystes*. Its type species is described below, and the included species, all from the Cape and transferred from *Palystes*, are listed below. Specific synonymies are not given here, but will be dealt with in a revision of *Parapalystes*. One of the included species, *Ocyptete megacephala* C. L. Koch, was described from material collected in the Cape Province during the last century. The holotype has not been found, but the description clearly places the species in *Parapalystes*. The genitalia, which provide

critical characters for identifying species in *Parapalystes*, were not described. Until the type material is located or a neotype is designated, the name will remain unidentifiable below generic level. In anticipation that the problem of its identity will be solved in the future, the species is transferred to *Parapalystes*.

TABLE 2

Comparison of differences between *Parapalystes* gen. n. and *Palystes* s. s. L. Koch, 1875.

<i>Parapalystes</i> gen. n.	<i>Palystes</i> s.s
<ul style="list-style-type: none"> • Domed posterior to AER. • Posterior slope starts anterior to fovea, fovea inclined. • Dorsally two fine white lines, thinly divided, from middle PER to white patch immediately anterior to fovea. 	<p>Carapace:</p> <ul style="list-style-type: none"> • Flat posterior to PER. • Posterior slope starts posterior to fovea, fovea horizontal. • Dorsally pale median line often present but not as obvious.
<ul style="list-style-type: none"> • Primary and secondary tibial apophyses present. • Embolus subtended by well-developed support flange. • Conductor of bulb robust, often sclerotised. 	<p>Male pedipalp:</p> <ul style="list-style-type: none"> • Primary apophysis only, present. • Support flange reduced or absent. • Conductor fragile, diaphanous.
<ul style="list-style-type: none"> • Median septum at least 3.0 X wider than long. 	<p>Female epigynum:</p> <ul style="list-style-type: none"> • Median septum longer than wide or only slightly (1.1 X) wider than long.
<ul style="list-style-type: none"> • Tibiae with one (distal) spine dorsally. 	<p>Leg spination:</p> <ul style="list-style-type: none"> • Tibiae with two (proximal and distal) spines dorsally.
<ul style="list-style-type: none"> • Sternum black, sometimes with large yellow mark posteriorly. • Coxae each with several small to large black spots ventrally. • Abdomen dorsally with solid brown pulmonary marking. 	<p>Markings:</p> <ul style="list-style-type: none"> • Sternum either solid black or with dark transverse bars. • Coxae dark to black antero-laterally, but with no spots ventrally. • Abdomen dorsally with outlined pulmonary marking, not solid.

Diagnosis: Similar to *Palystes* with respect to eye arrangement and proportions, and general body shape and attitude. Differs from *Palystes* (see Table 2) in having 2 tibial apophyses with additional ridges and sclerotised protrusions (as opposed to a single apophysis without additional processes), presence of an additional membrane to conductor lateral to embolus, wider than long epigynal septum with ear-shaped lateral excavations, presence of ventral spot markings on coxae, sternum colour (black with a pale yellow to white patch posteriorly), 1 (not 2) dorsal spines on tibiae I–IV, carapace shape (domed posterior to AER), thoracic fovea situated on posterior declivity of carapace (not anterior to it), carapace markings (2 thin white medial stripes running from between posterior median eyes to an oval white patch immediately anterior to fovea), yellow clypeus and yellow stripe or stripes often vestigial or absent at outer margin of chelicerae (not white).

Distribution: Known only from South Africa, from the north-western Cape across the interior to the eastern Cape.

***Parapalystes euphorbiae* sp. n.**

Figs 110–115

Type material:

Holotype: adult ♂: SOUTH AFRICA: **Cape Province:** Richtersveld [or near], ca 2 km E. Port Nolloth, found in nest in low leafless *Euphorbia* sp. shrub growing on dune hummocks, 3.ix.1989, P. M. C. Croeser (NMSA T503).

Paratypes: SOUTH AFRICA: **Cape Province:** 6♀, same data as holotype (NMSA T504); Richtersveld, ca 5 km E Port Nolloth, 1♀, found in nest in low leafless *Euphorbia* sp. shrub growing on dune hummocks, 4.ix.1989, P. M. C. Croeser, J. G. H. Londt, B. R. Stuckenberg (NMSA T504).

Type locality: The dune hummocks immediately inland of Port Nolloth in the north-western Cape Province.

Etymology: Named after the succulent shrub genus *Euphorbia*, in which the spiders were found at the type locality.

Remarks: The type specimens were all collected in leafless, waist-high *Euphorbia* sp. shrubs scattered over dune hummocks of loose sand a few kilometres inland from Port Nolloth. No more than one occupied nest was found in a shrub, although some shrubs were more than a metre across, and only a single spider was found in each nest. The nests were made by binding together vertical stems of the plants. The spiders were found in the nests, in one case with a sac of eggs. The male was found alone in an old nest. Size, as with most species of *Palystes*, can be very variable. A male of *P. euphorbiae* collected in 1935 from Kleinsee (50 km S. Port Nolloth), is 27 mm long (more than twice the length of the holotype).

Diagnosis: The shape of the embolus (Fig. 112), the form of the primary and secondary tibial apophyses (Fig. 113), the form of the median septum lobe of the epigynum (Fig. 110) which is widely separated but with dorsally deflected lateral lobes, and the position of the spermathecae internally (Fig. 111), distinguish the species from known congeners.

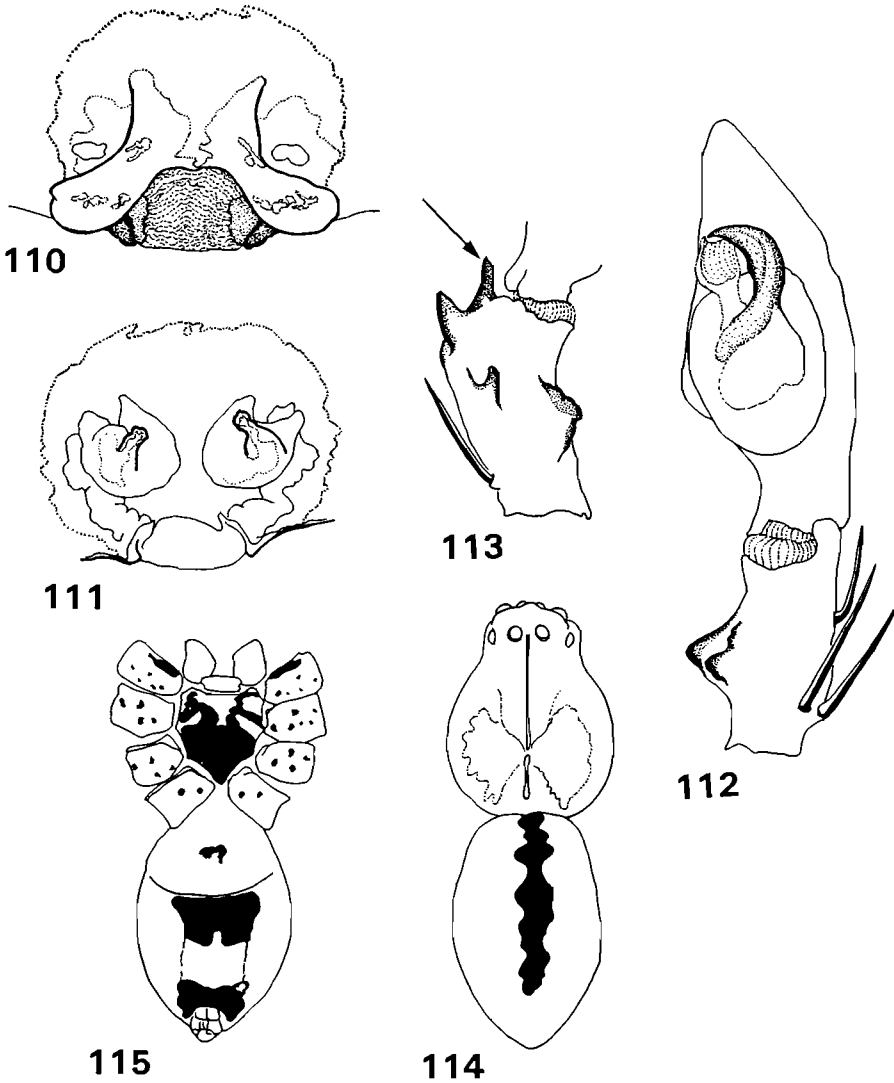
Distribution: Port Nolloth, north-western Cape, South Africa.

Description of holotype male:

Total length 11.00 mm.

Colour and markings: Dorsally (Fig. 114) a mottled light and dark brown. Abdomen dorsally with solid, liver-brown dorsal undulating cardiac marking along back (Fig. 114); ventrally (Fig. 115) with short, thick black transverse bar immediately posterior to epigastric groove, bar colour being emarginated medially at its posterior edge. Second, shorter black marking immediately anterior to spinnerets. Sternum without markings, dark. Coxae ventrally spotted with black and some fine black spotting ventrally and dorsally on femora. Ventral tibial banding vestigial distally, especially on III and IV.

Carapace: Dorsally domed posterior to AER, 5.00 long, 3.88 wide between leg bases II. Head region 2.25 wide across PER; thoracic fovea straight longitudinal 1.38 long, occupying 0.28 X of CL and 0.35 X of CW. *Eyes:* Eye diameters: AME 0.31, ALE 0.49, PME 0.29, PLE 0.29; PER 1.81 wide, wider than AER by 1.16 X and occupying 0.81 X of HW and 0.47 X of CW; eye ratio AME:ALE:PME:PLE is



Figs 110–115. *Parapalystes euphorbiae* sp. n. 110. External epigynum. 111. Internal epigynum (female paratype, NMSA T504, Port Nolloth). 112. Anteroventral aspect, male pedipalp. 113. Retrolateral aspect, tibial apophyses (arrow shows secondary apophysis). 114. Dorsal markings. 115. Ventral markings (male holotype, NMSA T503).

1:1.60:0.95:0.95; distances separating eyes: AME–ALE 0.03, AME–AME 0.20, AME–PME 0.43, ALE–PLE 0.38, PME–PLE 0.28, PME–PME 0.28; MOQ dimensions: MOQA 0.74, MOQP 0.98, MOQL 0.98; MOQ 1.00 X wider than long, narrowed anteriorly, with MOQP 1.33 X wider than MOQA. *Chelicerae*: 1.69 long, 1.06 wide, 1.59 X longer than wide. *Sternum*: 2.13 long, 1.94 wide between coxae II, 1.10 X longer than wide and 1.38 X wide between coxae I. *Labium*: 0.92 wide, 0.40 long, 2.31 X wider than long, occupying 0.67 X of SW between coxae I. *Maxillae*:

1.02 long, 0.65 wide, 1.57 X longer than wide.

Abdomen: 6.00 long and 4.00 wide.

Pedipalp: Embolus blade (Fig. 112) reflexed distally, ventral to supporting, flanged, median sclerite, conductor stalked, spatulate. Primary tibial apophysis a sclerotised ridge between a proximal longer spur and a distal shorter spur. Secondary tibial apophysis a spur projecting dorsally over paracymbium.

Legs: Spination irregular: left and right femora I+II(3:2:3), left femur III(3:2:2), left femur IV(2:3:2); right femur III(3:2:3), right femur IV(3:3:3). Tibiae all with only a distal spine dorsally. Measurements:

	Palpus	I	II	III	IV
Femur	3.38	6.75	7.13	5.50	7.13
Patella	1.75	2.63	2.50	2.00	1.63
Tibia	2.13	6.38	6.38	4.75	5.13
Metatarsus	–	5.63	5.63	3.88	4.63
Tarsus	5.00	1.88	1.88	1.38	1.63
Total:	12.26	23.27	23.52	17.51	20.15

Description of paratype female (NMSA T504):

Total length: 16.00 mm.

Colour and markings: As for male.

Carapace: Dorsally 7.25 long, 5.25 wide between leg bases II. Head region 3.69 wide across PER; thoracic fovea 1.75 long, occupying 0.24 X of CL and 0.33 X of CW. *Eyes*: Eye diameters: AME 0.40, ALE 0.58, PME 0.43, PLE 0.40, PER 2.63 wide, wider than AER by 1.17 X and occupying 0.71 X of HW and 0.50 X of CW; eye ratio AME:ALE:PME:PLE is 1:1.46:1.08:1.00; distances separating eyes: AME–ALE 0.08, AME–AME 0.23, AME–PME 0.51, ALE–PLE 0.46, PME–PLE 0.35, PME–PME 0.46; MOQ dimensions: MOQA 1.08, MOQP 1.32, MOQL 1.26, MOQ as long as wide; narrowed anteriorly, with MOQP 1.23 X wider than MOQA; clypeus 0.42 high, 1.04 X diameter of AME. *Chelicerae*: 3.06 long, 1.44 wide, 2.13 X longer than wide. *Sternum*: 2.63 long, 2.63 wide between coxae II, 1.00 X longer than wide and 2.31 wide between coxae I. *Labium*: 1.32 wide, 0.80 long, 1.65 X wider than long, occupying 0.57 X of SW between coxae I. *Maxillae*: 1.66 long, 1.20 wide, 1.38 X longer than wide.

Abdomen: 8.75 long and 5.63 wide.

Epigynum: Widely separated posterior excavated lobes of median septum of epigynum twisted dorsally. Spermathecae short, inserted on heavily sclerotised, bulbous invaginations of median septum, and directed anteriorly.

Legs: Leg spination not as irregular as in male: left and right femora I–III(3:2:3), left femur IV(3:3:2), right femur IV(3:4:2 – due to a small ancillary spine rising close to base of one of dorsal spines). Tibiae dorsally, both sides, I–IV with single, distal spine. Measurements:

	Palpus	I	II	III	IV
Femur	2.13	7.13	7.63	6.25	7.88
Patella	1.25	3.13	3.25	2.75	2.75
Tibia	1.50	6.50	6.63	5.38	6.38
Metatarsus	–	6.00	6.00	4.25	5.88
Tarsus	2.88	2.00	1.88	1.63	1.75
Total:	7.76	24.76	25.39	20.26	24.64

Additional material examined: None.